

THE MINING AND METALLURGICAL JOURNAL.

FORMERLY THE PACIFIC COAST BULLION.

VOL. XVII., No. 3

LOS ANGELES, CAL., MAY 1, 1897

PRICE, 10 CENTS

The Gold & Silver Extraction Co. OF AMERICA, LIMITED.



TRADE MARK
CAPITAL.
The Original
Cyanide Process
Simple
Reliable
Economical
Gold Medal Colum-
bian Exposition
1893

Mine Owners and others having Refractory and Low Grade Gold and Silver Ores and Tailings should have their material tested by The MacArthur-Forrest Cyanide Process. Samples assayed and fully reported upon. Particulars upon application.
ADVISORY BOARD IN THE UNITED STATES
Geo. A. Anderson, General Manager;
Hugh Butler, Attorney; W. S. Ward;
J. Stanley Muir, Technical Manager.
CALIFORNIA AND NEVADA AGENT,
Bertram Hunt, 216 Sansome St., San Francisco

Office: McPhie Building, Denver, Col.

THE EDWARD P. ALLIS COMPANY

MANUFACTURERS OF

Mining, Milling and Smelting Machinery

Crushers, Concentrators, Pumps, Compressors, Hoists, Boilers,
Reliance Crushing Rolls, Reynolds Corliss Engines, &c.

Send for Catalogue.

Milwaukee, Wis.

THE RUSSELL PROCESS

*The Improved Method of Lixivation
for Free and Rebelious Silver and
Gold Ores and Tailings, Either Raw
or After Roasting. Send for New
Publications Just Issued.*

The Russell Process Co. - Park City, Utah.

THE ROESSLER & HASSLACHER Chemical Co.

73 Pine St., New York

CYANIDE

Peroxide of Sodium

Hyposulphite of Soda

Chloride of Lime

Sulphide of Iron



Trade Mark
And Other Chemicals for Mining Purposes.

The California

THE CELEBRATED

HAMMERED STEEL Shoes and Dies

Warranted Not to Clip Off or Batter Up. A HOME PRODUCTION

Best Refined Cast Tool Steel, Well Bit Steel, Heavy and Light
Iron and Steel Forgings of all Descriptions.

GEO. W. PENNINGTON & SONS., 218 and 220 Folsom street, SAN FRANCISCO, CAL.

PLEASE MENTION THE JOURNAL

ADAMANTINE SHOES & DIES

AND CHROME CAST STEEL

Cams, Tappets, Bosses, Roll
Shells and Crusher Plates.

These castings are extensively used in all the Mining States and Territories of North and South America. Guaranteed to prove better and cheaper than any others. Orders solicited subject to above conditions. When ordering send sketch with exact dimensions. Send for Illustrated Circular.

CHROME STEEL WORKS,

Kent Ave. & Keap St., - BROOKLYN, N. Y.

The Pelton Water Wheel

Affords the Most Economical and Reliable Power for Mining,
Electric and all other purposes.

7000 WHEELS NOW RUNNING

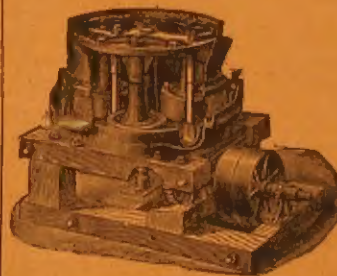
PELTON WATER WHEEL CO., 121 Main St., San Francisco, Cal.

PARKE & LACY COMPANY

21 and 23 FREMONT STREET, SAN FRANCISCO, CAL.

LICENSEE FOR THE MANUFACTURE AND SALE OF

The Huntington Centrifugal Roller Quartz Mill



THE HUNTINGTON MILL is so well and favorably known among mining men throughout the world that any description of it would seem superfluous. They are in use in the United States, Canada, Mexico, Central and South America, Australia, China, Japan, and South Africa. In fact, wherever mines exist, and have given the best satisfaction of all quartz crushing mills.

The construction of this mill has lately been much improved and we claim it to be the

CHEAPEST, MOST EFFICIENT, SIMPLEST, AND MOST DURABLE MILL UPON THE MARKET.

← CATALOGUE & APPLICATION →

Am. Zinc-Lead Smelter CANON CITY, COLORADO. NEW MEXICO AND ARIZONA SMELTER Hanover, Grant County, N. M.

Will buy all kinds of ores; specialty made of copper ores and those containing steel. Low grade refractory ores desired. Write for prices to either smelter.
C. H. CURTIS, General Agents
New Mexico and Arizona Smelter
M. H. WARTNEY, General Manager
Canon City, Colorado.

Consolidated Kansas City Smelting & Refining Co.

BUYERS OF ALL CLASSES OF

BULLION, MATTE, ORE & MILL PRODUCTS, GOLD & SILVER BARS

Smelting Works {Leadville, Colorado.
El Paso, Texas.
Argentine, Kansas.
REFINERIES: ARGENTINE KANSAS.

FOLLOWING CODES USED: At Argentine, Kansas.
A. D. C.
Moreing & Moll's
and Bedford McNeill's.

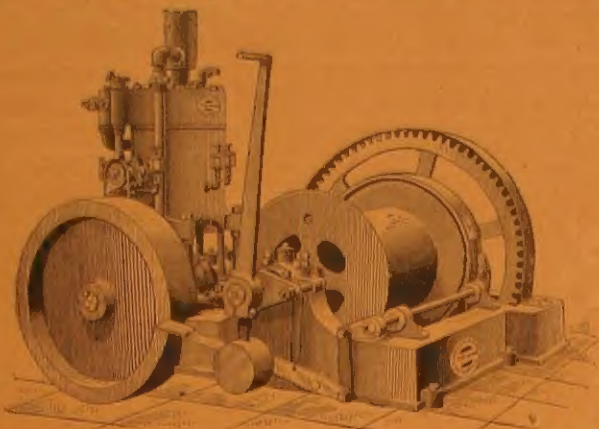
Ore Purchasing Agencies

{Spokane, Wash. Salt Lake, Utah.
Leadville, Colorado. Denver, Colorado.
El Paso, Texas. Argentine, Kansas.
Cripple Creek, Colorado.

McDearmon & Co.
 Asbestos Boiler & Steam Pipe Coverings
 Asbestos Cement for Boilers, drums, Heaters,
 Etc. Special facilities for supplying
 the mining trade.
 Pacific Coast Agent for H. W. John's Co's Asbestos
 National Coverings
 422 Sacramento Street, San Francisco, Cal.

STEAM STAMP FOR CRUSHING
ORES
 Cheapest to install and
 operate. Capacity guar-
 anteed. Catalogue sent.
GATES IRON WORKS
 CHICAGO

"Union" Hoist



Union Gas or Oil Engine and Hoist Combined, on strong, iron base.
No Fire No Steam No Boiler No Danger
 TEN YEARS' EXPERIENCE. TWO THOUSAND ENGINES IN USE.

Started instantly. Compact, strong, simple, efficient, economical. Perfectly governed, so that oil is used only in proportion to the work done. No expense when idle.

Particularly Adapted to Mining in Localities Where
 Fuel and Water are Expensive.

Built in the following sizes:—1 H.P., 4 H.P., 6 H.P., 8 H.P., 10 H.P., 15 H.P.,
 20 H.P., 30 H.P., 40 H.P.

Send for Catalogue and state what H. P. required.

Union Gas Engine Co.,

301 Howard Street, San Francisco, Cal.

Morgan & Co.
 MINING—SMELTING—FOR 35 YEARS
 PRACTICAL
ORE TESTING
 REFINING ASSAYING
 CYANIDE AND OTHER PROCESSES
 MINES EXAMINED AND DEALT IN
 BULLION PURCHASED

Office: Room 210-212
 WISDOM BLOCK
 115 N. GAST ST.
 LOS ANGELES, CAL.

Agents for: GOLD, SILVER, COPPER, IRON, LEAD, ZINC, NICKEL, CHROME, MANGANESE, POTASH, SODA, LIME, CEMENT, GLASS, PAPER, TEXTILES, FERTILIZERS, CHEMICALS, ETC.

FRANKLIN BOOTH
 MINING ENGINEER AND METALLURGIST
 With **L. BOOTH & SONS**
 MECHANICAL ENGINEERS AND DEALERS IN
Machinery and Mining Supplies

Agents Union Gasoline Hoists, Weber Oil Engine, Joshua Hendy Stamps
 Mills, Rock Breakers, Ore Buckets, and Cars, Davis Horse Wheel, Dean
 and Marsh Steam Pumps, Pennsylvania Boiler Works, Chandler
 Taylor Engines, Agent Dodge Manufacturing Co's Wood-
 Split Pulleys and Power Transmission Machinery.
 L. B. Williams, Belting.

338 North Main street, BAKER BLOCK, Los Angeles, Cal.

WOODBURY CONCENTRATOR



No. 131 First St., San Francisco

Miners' Assay Office

LOUIS SECKELS, MANAGER
 24 W. 2d, South St., San Francisco, Cal.
 P. O. Box 1218.
 ASSAY FOR GOLD AND SILVER 75 CENTS.
 Samples sent by mail or express will receive
 Prompt and Careful Attention.

GOLD IN COLORADO!

Colorado has within its limits some of the greatest gold mines that have ever been discovered. In Cripple Creek in 1892 there were a few prospector's looking over the hills; in 1896 the camp turned out over \$10,000,000 in gold. The West Creek district which is only thirty miles north of Cripple Creek is being thoroughly prospected and is one of the most inviting fields at the present time for the mines. The Denver and Rio Grande railroad has built a substantial stage road from Palmer to Lumberton which will greatly shorten the distance between Denver and the West Creek district. Leadville, the old bonanza camp and the mineral product of which made Denver what it is today, is becoming a big producer of gold. The low price of silver has driven all the men and capital who were formerly in silver mining to gold mining and the new inventions for working low grade gold ores, together with the discoveries made to work rebellious ores has opened up a field for the miners such as they have never enjoyed before and Colorado has inducements to offer such as no other district in the world possesses, the record of the state in gold production for the last three years speaks for itself. Among the other prominent camps in the state are Telluride, Ophir, Rico, Silverton, Mineral Point, Durango, La Plita, Ouray, Saw Pit, Ironton, the Gunnison District and many others. New finds are being made and new camps are springing into existence every day. The Denver & Rio Grande railroad, which is the pioneer road of Colorado and which has always been the miner's friend, reaches all the mining camps in Colorado. For elegantly illustrated descriptive books, free of mines in Colorado, send to

W. J. SHOTTS, General Agent
 314 California St., San Francisco, Cal.
 S. K. HOOPER,
 General Passenger Agent, DENVER, COLO.

Rix Compressed Air Machinery Co.

11 and 13 First Street, San Francisco, Cal.

MANUFACTURERS OF

Pneumatic Machinery of all kinds,
 Rock Drills,
 Air Compressors,
 Compressed Air Hoisting Engines,
 Stone Cutting and Carving Tools, driven by
 Compressed air.
 Compressed Air Machinery for quarrying stone
 Compressed Air Pumps for both cold & hot air
 Appliances for reheating compressed air.
 "Ferrite" Shoes and Dies,
 Projectile Steel Shoes and Dies,
 Guaranteed to be the most economical Shoe and Die
 on the market.

ALSO DEALERS IN

General Mining Machinery

Send for Latest Catalogue.



A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Abbott, W. O.	Baker Iron Works	Cahill, A. S.	Dennison, H. C.	Engar & Co.	Fairbanks, Morse & Co.	Garbutt, F. C.	Hallawell, R. L.	Incorporated Mines	Jeffrey Manufacturing Co.	Kenpton, C. W.	Leffel & Co., James	Machinery and Electrical Co.	Nelden Judson Drug Co.	Oakland Iron Wks.	Pacific Metal Wks.	Rio Grande Western Ry.	Sanders & Jones	Shaw, Taggart, Batchelor	Taggart, J. F.	Union Gas Engine Co.	Van Der Nellen, A.	Wade & Wade
Agaramonte, C. H. M. y	Best Manufacturing Co.	Calk, Prefronting Screen Co.	Denver Fire Clay Co.	Engel & Co.	Pawler, C. C.	Garratt & Co., W. T.	Hammond Manufacturing Co.	Ireland Jr., Wm.	Johnsberg Sampling Works	Kern Co. Assay Office	Leonard & Hillis	Matteson Manufacturing Co.	Neison & Co., H. L.	O'Bannon, J. C.	Pacific Tank Co.	Ridgely Iron Works	Schaw, Taggart, Batchelor	Thomas & Boyle	Taylor & Co., John	Union Hardware & Metal Co.	Vulcan Iron Works	Wanted positions
Allis Co., Edward F.	Bell Metallic Assay Office	Calk, Wire Works	Denver Public Sampling Wks.	Engel & Co.	Pulton Engineering & Shipbuilding Works	Gates Iron Works	Hanks, Abbott H.	Irish Jr., Wm.	Johnsberg Sampling Works	Kern Co. Assay Office	Lloyd, R. T.	McDearmon & Co.	Neison & Co., H. L.	O'Connell, J. C.	Pacific Tank Co.	Ridgely Iron Works	Schaw, Taggart, Batchelor	Thomas & Boyle	Taylor & Co., John	Union Hardware & Metal Co.	Vulcan Iron Works	Wanted positions
Alphabetic Index to Advertisers	Bell Metallic Assay Office	Calk, Wire Works	Denver Public Sampling Wks.	Engel & Co.	Pulton Engineering & Shipbuilding Works	Gates Iron Works	Hanks, Abbott H.	Irish Jr., Wm.	Johnsberg Sampling Works	Kern Co. Assay Office	Lloyd, R. T.	McDearmon & Co.	Neison & Co., H. L.	O'Connell, J. C.	Pacific Tank Co.	Ridgely Iron Works	Schaw, Taggart, Batchelor	Thomas & Boyle	Taylor & Co., John	Union Hardware & Metal Co.	Vulcan Iron Works	Wanted positions
Angels Iron Works	Bell Metallic Assay Office	Calk, Wire Works	Denver Public Sampling Wks.	Engel & Co.	Pulton Engineering & Shipbuilding Works	Gates Iron Works	Hanks, Abbott H.	Irish Jr., Wm.	Johnsberg Sampling Works	Kern Co. Assay Office	Lloyd, R. T.	McDearmon & Co.	Neison & Co., H. L.	O'Connell, J. C.	Pacific Tank Co.	Ridgely Iron Works	Schaw, Taggart, Batchelor	Thomas & Boyle	Taylor & Co., John	Union Hardware & Metal Co.	Vulcan Iron Works	Wanted positions
Antelope, Colorado	Bell Metallic Assay Office	Calk, Wire Works	Denver Public Sampling Wks.	Engel & Co.	Pulton Engineering & Shipbuilding Works	Gates Iron Works	Hanks, Abbott H.	Irish Jr., Wm.	Johnsberg Sampling Works	Kern Co. Assay Office	Lloyd, R. T.	McDearmon & Co.	Neison & Co., H. L.	O'Connell, J. C.	Pacific Tank Co.	Ridgely Iron Works	Schaw, Taggart, Batchelor	Thomas & Boyle	Taylor & Co., John	Union Hardware & Metal Co.	Vulcan Iron Works	Wanted positions
Aubrey, L. R.	Bell Metallic Assay Office	Calk, Wire Works	Denver Public Sampling Wks.	Engel & Co.	Pulton Engineering & Shipbuilding Works	Gates Iron Works	Hanks, Abbott H.	Irish Jr., Wm.	Johnsberg Sampling Works	Kern Co. Assay Office	Lloyd, R. T.	McDearmon & Co.	Neison & Co., H. L.	O'Connell, J. C.	Pacific Tank Co.	Ridgely Iron Works	Schaw, Taggart, Batchelor	Thomas & Boyle	Taylor & Co., John	Union Hardware & Metal Co.	Vulcan Iron Works	Wanted positions
Austin Bros.	Bell Metallic Assay Office	Calk, Wire Works	Denver Public Sampling Wks.	Engel & Co.	Pulton Engineering & Shipbuilding Works	Gates Iron Works	Hanks, Abbott H.	Irish Jr., Wm.	Johnsberg Sampling Works	Kern Co. Assay Office	Lloyd, R. T.	McDearmon & Co.	Neison & Co., H. L.	O'Connell, J. C.	Pacific Tank Co.	Ridgely Iron Works	Schaw, Taggart, Batchelor	Thomas & Boyle	Taylor & Co., John	Union Hardware & Metal Co.	Vulcan Iron Works	Wanted positions
American Zinc Lead Co.	Bell Metallic Assay Office	Calk, Wire Works	Denver Public Sampling Wks.	Engel & Co.	Pulton Engineering & Shipbuilding Works	Gates Iron Works	Hanks, Abbott H.	Irish Jr., Wm.	Johnsberg Sampling Works	Kern Co. Assay Office	Lloyd, R. T.	McDearmon & Co.	Neison & Co., H. L.	O'Connell, J. C.	Pacific Tank Co.	Ridgely Iron Works	Schaw, Taggart, Batchelor	Thomas & Boyle	Taylor & Co., John	Union Hardware & Metal Co.	Vulcan Iron Works	Wanted positions
	Bell Metallic Assay Office	Calk, Wire Works	Denver Public Sampling Wks.	Engel & Co.	Pulton Engineering & Shipbuilding Works	Gates Iron Works	Hanks, Abbott H.	Irish Jr., Wm.	Johnsberg Sampling Works	Kern Co. Assay Office	Lloyd, R. T.	McDearmon & Co.	Neison & Co., H. L.	O'Connell, J. C.	Pacific Tank Co.	Ridgely Iron Works	Schaw, Taggart, Batchelor	Thomas & Boyle	Taylor & Co., John	Union Hardware & Metal Co.	Vulcan Iron Works	Wanted positions
	Bell Metallic Assay Office	Calk, Wire Works	Denver Public Sampling Wks.	Engel & Co.	Pulton Engineering & Shipbuilding Works	Gates Iron Works	Hanks, Abbott H.	Irish Jr., Wm.	Johnsberg Sampling Works	Kern Co. Assay Office	Lloyd, R. T.	McDearmon & Co.	Neison & Co., H. L.	O'Connell, J. C.	Pacific Tank Co.	Ridgely Iron Works	Schaw, Taggart, Batchelor	Thomas & Boyle	Taylor & Co., John	Union Hardware & Metal Co.	Vulcan Iron Works	Wanted positions
	Bell Metallic Assay Office	Calk, Wire Works	Denver Public Sampling Wks.	Engel & Co.	Pulton Engineering & Shipbuilding Works	Gates Iron Works	Hanks, Abbott H.	Irish Jr., Wm.	Johnsberg Sampling Works	Kern Co. Assay Office	Lloyd, R. T.	McDearmon & Co.	Neison & Co., H. L.	O'Connell, J. C.	Pacific Tank Co.	Ridgely Iron Works	Schaw, Taggart, Batchelor	Thomas & Boyle	Taylor & Co., John	Union Hardware & Metal Co.	Vulcan Iron Works	Wanted positions
	Bell Metallic Assay Office	Calk, Wire Works	Denver Public Sampling Wks.	Engel & Co.	Pulton Engineering & Shipbuilding Works	Gates Iron Works	Hanks, Abbott H.	Irish Jr., Wm.	Johnsberg Sampling Works	Kern Co. Assay Office	Lloyd, R. T.	McDearmon & Co.	Neison & Co., H. L.	O'Connell, J. C.	Pacific Tank Co.	Ridgely Iron Works	Schaw, Taggart, Batchelor	Thomas & Boyle	Taylor & Co., John	Union Hardware & Metal Co.	Vulcan Iron Works	Wanted positions
	Bell Metallic Assay Office	Calk, Wire Works	Denver Public Sampling Wks.	Engel & Co.	Pulton Engineering & Shipbuilding Works	Gates Iron Works	Hanks, Abbott H.	Irish Jr., Wm.	Johnsberg Sampling Works	Kern Co. Assay Office	Lloyd, R. T.	McDearmon & Co.	Neison & Co., H. L.	O'Connell, J. C.	Pacific Tank Co.	Ridgely Iron Works	Schaw, Taggart, Batchelor	Thomas & Boyle	Taylor & Co., John	Union Hardware & Metal Co.	Vulcan Iron Works	Wanted positions
	Bell Metallic Assay Office	Calk, Wire Works	Denver Public Sampling Wks.	Engel & Co.	Pulton Engineering & Shipbuilding Works	Gates Iron Works	Hanks, Abbott H.	Irish Jr., Wm.	Johnsberg Sampling Works	Kern Co. Assay Office	Lloyd, R. T.	McDear										

**CANTON
MINING DRILL
STEEL**

Sole Agents



WIRE ROPE AND WIRE
OF EVERY DESCRIPTION

A detailed illustration of a steam engine, likely a portable or agricultural model. It features a large, spoked flywheel on the right side, connected to a horizontal cylinder. A vertical cylinder, possibly a condenser or water tank, is positioned on the left. The engine is mounted on a sturdy, cast-iron frame. The illustration is in a classic, engraved style, typical of technical manuals from the late 19th century.

210 and 218 S. Los Angeles St., Los Angeles, Cal.

Jackson's Single-Valve Cross-Compound Steam Engines.
"Light Weight" Oil Motors,
"Whirlpool" Centrifugal Pumps,
"Light Weight" Horse Forks,
"Feeders" for Threshing Machines
"Eclipse" Stackers, and
"Acme" Hay Rakes.



WRECKING PUMP AND STEAM ENGINE FOR
10 FOOT LIFT.



Compound Pump 300 for 1 for Hydraulic Mining

OTTO HECKELMANN

FERDINAND McCANN

ASSAYERS AND CHEMISTS.**Heckelmann & McCann + + Bullion Dealers**

Cash paid for all kinds of Gold, Silver and Ores. All assays
and Chemical Analysis at Mexican Silver Rates, 50
per cent. Less than American Price.

PUENTE DE SAN FRANCISCO, No. 6

CITY OF MEXICO

**Mexican, American and Foreign Patents,
TRADEMARKS, ETC.**

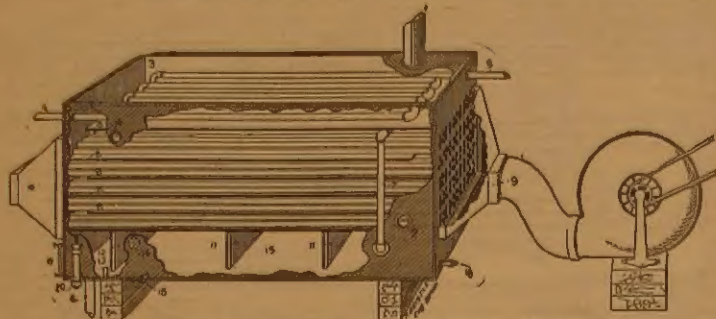
Reports on Mining and Other Properties.

Proprietors of *Weekly Anglo-American*, a first-class Advertising Medium.
Established 8 Years.

C. H. M. y Agramonte,

P. O. Box 383. Cable Address, "Agra".

CITY OF MEXICO, MEXICO.

**Kellers' New Improved Feed Water Heater, Purifier,
Condenser, and Hot Air Blast Combined.**

180 deg. of hot air forced out of device which can be utilized for drying or heating purposes or carried under the boiler furnaces as a force draft. The foul air can all be drawn out of mine with this same attachment. Where the air is not required leave off the Fan, it will not condense quite so fast, but other results will be the same. This Device is endorsed by practical Mechanics and the largest Smelters and Plants in the country. This is the ONLY HEATER ENDORSED BY THE AMERICAN INSTITUTE OF MINING ENGINEERS. Send for Descriptive Catalogue.

Star Boiler, Sheet Iron and Feed Water Heater Works,

2166-76 FIFTEENTH STREET,

DENVER, COLORADO

THEODOR LEXOW

105 Broadway New York

Importers of

CARBONS

— FOR —
DIAMOND DRILLS and all Mechanical
Purposes

Henry Demmert

J. HOWARD WILSON**Assayer & Chemist**

A Specialty Made of Umpire Work.

306 Santa Fe Ave., Pueblo, Colo.

A. Kratzmer

Iron and Brass Castings of all kinds.
Shoes and Dies, Cams, Bases, Tappets,
Mortars, etc., etc. Complete

Stamp Mills

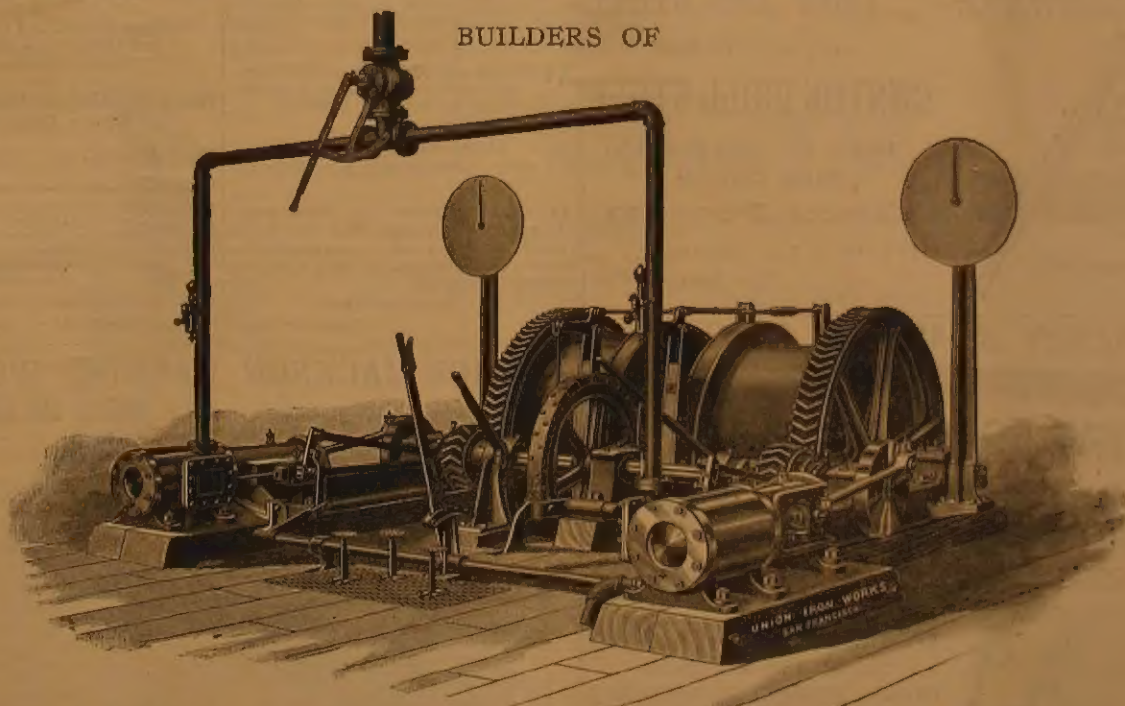
of any size made and Sold at strictly

San Francisco Prices.

Correspondence Solicited.

BAKERSFIELD, CALIFORNIA.**UNION IRON WORKS**

BUILDERS OF

**Mining, Milling, Concentrating and Smelting Machinery**

222 MARKET STREET, SAN FRANCISCO, CAL.

SEND FOR NEW CATALOGUE

C. W. KEMPTON
MINING ENGINEER

Oro Blanco, Arizona

30 years experience in exploration, mining and milling. 10 years as superintendent and manager, Boston, New York, and Chicago references.

G. WHEATLEY,
Mines and Mining
CORRESPONDENCE SOLICITED
TUCSON, . . . ARIZONASeventeen years' practical experience
on Pacific Coast.**L. E. AUBURY**ASSAY OFFICE:
1428 N. Street**Mining Engineer & Metallurgist**

SAN DIEGO, CAL.

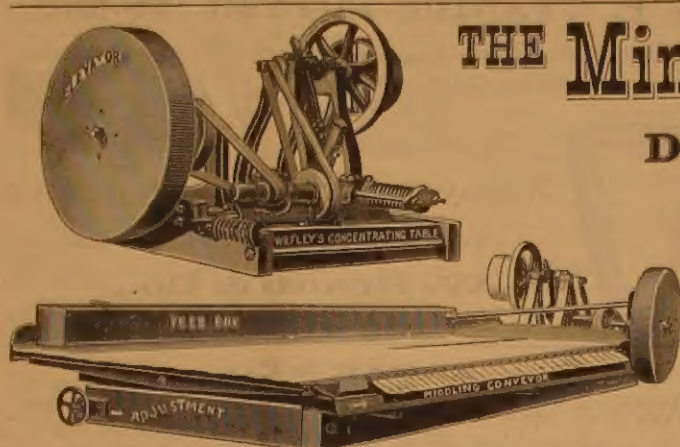
Special attention given to examination and reports on mining properties on Pacific Coast.
Reference, Blochman Banking Co., San Diego.**Pacific Amalgamator**

PAT. APRIL 30, 1897

FOR PLACER OR MILL USE

No other plate necessary where the Pacific Amalgamator is used. These machines are sent out with a Guarantee backed by people who are responsible for what they say. They will place them in mills and sell subject to doing amount and character of work guaranteed before payment is made.

Mills in all parts of the country are throwing out plates and replacing them with Pacific Amalgamators

Pacific Mining Machinery Co., 129 First St., San Francisco**THE Mine and Smelter Supply Co.**
DENVER, COLORADO

ARE SOLE AGENTS FOR THE

WILFLEY
CONCENTRATOR

and claim for it BETTER work than any Concentrator made, with a capacity of from 15 to 25 tons per day of 24 hours. It is simplicity itself. No moving belts or intricate parts. Any one can learn to operate in an hour.

For confirmation of all of the above we refer to Henry Lows, Poudre Mine, Breckenridge, Colo.; M. F. Smith Concentrator, Golden, Colo.; Mary Murphy Mine, St. Elmo, Colo.; W. E. Reuschaw, Mayflower Mill, Idaho Springs, Colo.; H. E. Woods, Denver, Colo.; Standard Mill, Wallace, Idaho; Smuggler Mill, Aspen, Colo.; Smuggler Union Mill, Telluride, Colo.

THE MINE AND SMELTER SUPPLY CO., DENVER, COLO.

BRECKENRIDGE, COLO., Dec. 1, 1896.

GENTLEMEN—You asked us what experience we have had with the Wilfley Table, and we would state that after trying a Woodbury, a Frue Vanners, a Johnston, a Embury and Electrical Process; Harris Jig and Buddles, we have found that the Wilfley Table is the only table that has given us satisfaction. We are using two tables, at a profit to our mill, where all other devices have proven a failure, and we can heartily recommend them to any intending purchasers. Yours very truly,

(Signed), R. DE BARNEZ, Supt.

We also Handle the Huson Wire Tramway.

These Tables have displaced belt tables of almost every make,
as is shown by letters in our possession.

Price = \$450.**Assayers AND**
Chemists
SUPPLIES

MANUFACTURERS OF

Crucibles,
Scorifiers,
Muffles,

— AND —

• FIRE BRICK •

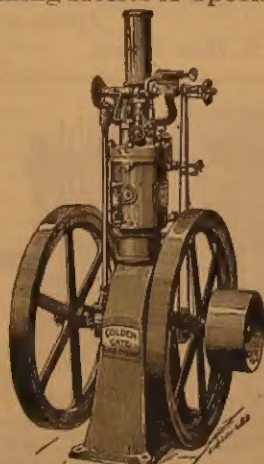
— AGENTS FOR —

Baker & Adamson's Celebrated
Acids and Chemicals

— DEALERS IN —

Glassware,
Porcelaine
Goods, Etc.**Standard Fire Brick Company,**
Pueblo, Denver, Colo.**THE GOLDEN GATE**
Gas or Gasoline Engine
Mining Hoists A Specialty

The CHEAPEST is not Always the BEST



POSITIVE STEADY MOTION

ADAM SCHILLING & SONS
311 213 Main St., San Francisco,
Send for Circulars and state Horse Power
Required.**S. S. MACHINERY CO.**

Buy, Sell and Trade in All Kinds of SECOND-HAND
Mining and Wood Working Machinery.

CORRESPONDENCE SOLICITED.

OFFICE: 1520 Lawrence
WORKS: Sixth and Market

DENVER, COLORADO

TELEPHONE 1050, 130
Works, 1234**THOUSANDS** Now in Use Over the WorldTRUAX PATENT
IMPROVED**Automatic Ore Cars.**THEY ARE THE BEST
AND CHEAPEST.**Truax Mfg Co.**

DENVER, COLORADO.

The Only Exclusive Ore Car Manufacturers in America.



Pat. Jan. 5, '93, Aug. 27, '95. Send for Catalogue. All dealers in Mining Machinery have them

The "Journal" OfficeIs located in the Stimson Block
LOS ANGELES, CAL.**ALL THE MINING CAMPS OF UTAH AND COLORADO**

ARE LOCATED ON OR REACHED BY THE

RIO GRANDE WESTERN RAILWAY**MERCUR**

JOHANNESBURG

AMERICA

NEW

WONDERFUL**CAMP**

45 MILES FROM

SALT LAKE CITY

**CRIPPLE CREEK**

THE GREATEST GOLD

CAMP

IN THE WORLD

ONLY

4**YEARS OLD**

200 SHIPPING MINES

IN THE

DISTRICT**THE SHORTEST, QUICKEST AND MOST DIRECT ROUTE TO****MERCUR AND CRIPPLE CREEK**

W. H. SNEEDAKER,

SALT LAKE CITY, UTAH

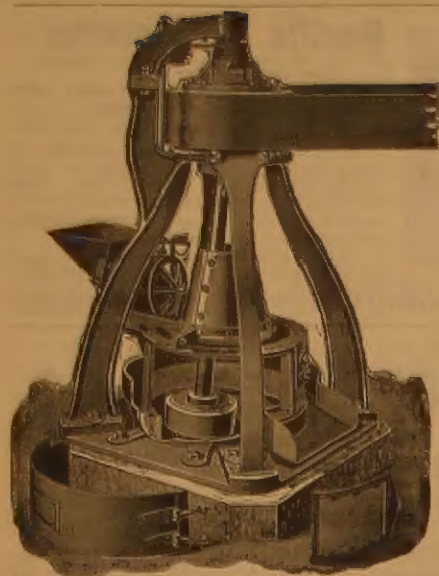
FOR RATES OR ANY OTHER INFORMATION APPLY TO:

D. C. DODGE, 100 FIFTH ST. S. F.

S. H. BABCOCK, 100 FIFTH ST. S. F.

F. A. WADLEIGH,

DENVER, COLORADO



THE GRIFFIN MILL

The only Perfect Pulverizer Working both Wet or Dry Process

NO JOURNALS IN PULVERIZING CHAMBER.

Delivers a finished product. Will pulverize 1 to 2 tons per hour on Portland Cement, Quartz or ores depending on hardness of material and firmness of product.

— Manufactured and Sold by —

Bradley Pulverizer Co.,

92 STATE STREET,
Boston, Mass.



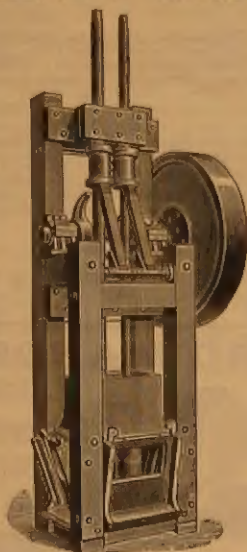
JEFFREY
Roller, Steel and Special Chains
FOR
**ELEVATING
AND CONVEYING
MACHINERY.**
FOR HANDLING MATERIAL OF ALL KINDS.
**POWER TRANSMISSION
MACHINERY.**
COAL MINING MACHINERY.
Wire Cable
Conveyors.
For long and short distance conveying.

THE JEFFREY MFG. CO. 163 Washington St.
Columbus, Ohio. NEW YORK.
Send for Catalogue.

J. B. TOMLINSON, M. E.
Prescott, Arizona,

MINING PROPERTIES EXAMINED, APPRAISED AND REPORTED UPON
— AND —
Supervision taken of the development of prospects and the operation of mines.

"HENDY" IMPROVED



**Triple Discharge Two-Stamp
MILL**

Capacity six to ten tons per day
Price, \$450.00

JOSHUA HENDY MACHINE WORKS

38 to 44 Fremont St., San Francisco, Cal.

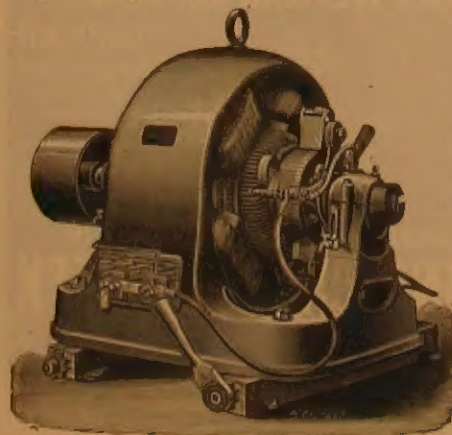
Agency TRIUMPH ELECTRIC CO.

CINCINNATI, OHIO

Generators,
Motors
Isolated Lighting
Plants
Electric Elevators
and Pumps
Water Wheels,
Boilers & Engines

Write for Estimates.

122 W. Second Street
LOS ANGELES, CAL.



Assayers' Miners' and Chemists' Supplies



Crucibles, Muffles,
Scorifiers, Furnaces,
Cupels, &c., &c.

C. P. CYANIDE POTASH (98-99%)

Dioxide Sodium, Zinc Shavings,
Borax Glass, Litharge,
C. P. Test Lead



AND EVERYTHING REQUIRED BY

Assayers' Miners' and Chemists'

We invite Correspondence and solicit orders.

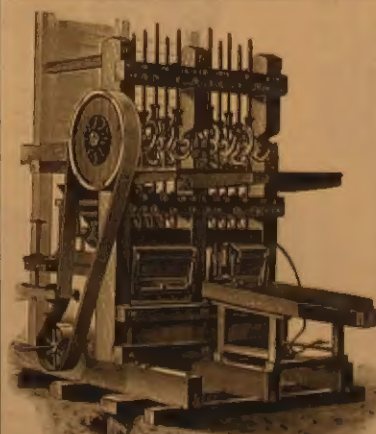
F. W. Braun & Co.,

401 to 407 N. Main St., Los Angeles

EAGAR & CO.
Assay Office and Sampling Works.
Assaying, Mill Tests, Cyanide Tests, Etc. Special Attention to work sent by Mail.
No. 10 Stevenson Street, San Francisco, Cal.

Chas. P. Grimwood,
Mining Engineer and Metallurgist
Laboratory, 214 Pine Street, SAN FRANCISCO, CAL.

WM. H. HOEGEE
MANUFACTURER OF
Oiled Clothing, Awnings, Tents, Sails, Tarpaulins, Flags, Banners, and
Camp Furniture. Tents and Canvas Floors for Rent.
Jobber of Cotton Duck, Etc.
136 S. Main Street, LOS ANGELES, CAL.



A SELF-EVIDENT FACT.

In the treatment of many low grade ores, the margin of profit is sometimes so small that great care and judgment is required in the selection of properly designed machines and appliances as well as in the arrangement of the same. The manufacture of

MINING MACHINERY

of every description is our specialty. Our new shops were specially designed for this purpose.
Gates Rock and Ore Breakers
Have acquired a reputation for superiority world-wide in extent.

Crushing Rolls, Stamp Mills, Smelters, Concentrators,
Pans, Settlers, Hoisting, Conveying and
Pumping Machinery.

Complete Installations for all Methods of Treatment.

For Catalogues and further information, address

Gates Iron Works, 650 Elston Ave, Chicago, U.S.A.

New York
136 Liberty St.

London, E. C.
73 A. Queen Victoria St.

Butte, Mont.
Silver Bow Block

City of Mexico
Calle de Gante No. 3

ENTERED AT THE POST OFFICE AT LOS ANGELES, CALIFORNIA,
AS SECOND CLASS MAIL MATTER.

F. W. EDELSTEN, Editor.

LIONEL A. SHELDON,
Special Contributor

ULRICH KNOCH, Publisher

OFFICE, Stimson Block, Los Angeles, Cal.

SUBSCRIPTION PRICE:

For United States, Mexico and Canada.....	\$3.50 per annum
" " " " " "	1.25 six months
All other countries in the postal union.....	3.50 per annum
" " " " " "	1.75 six months

ISSUED SEMI-MONTHLY

SPECIAL REPRESENTATIVES:

The Journal is kept on file at the following places where contracts for advertising can be made:

San Francisco, Cal.—E. C. Dake, 64 and 65 Merchants Exchange.

Denver, Colorado—Ed. P. Eppich & Co., 47 Bank Building.
Chicago, Ill.—Newbegin & Co., Room 701 Monadnock Block.
New York City—Wm. Edelman, Jr., 166 Broadway.
City of Mexico, Mexico—O. H. M. Agramonte, 17 Cinco De Mayo.

ADVERTISING RATES FURNISHED ON APPLICATION.

WHY NOT BE CONSISTENT AND INDEPENDENT?

The friends of the single gold standard affect to believe that this country cannot safely adopt bimetalism, or the free coinage of both gold and silver, without the consent of the principal commercial nations of Europe. It is put upon the ground that we cannot do that and successfully carry our international commerce, as in such trade the nations are interdependent.

In regard to financial policies our attitude is one of obsequiousness, the yielding of our own interests to the views of other nations, an uncommon generosity as between nations whose interests are supposed to be conflicting. We are not, however, as considerate of their welfare in the matter of tariff legislation, while on the money question we are begging for a conference, and concessions. We are proceeding to pass laws taxing the products of other countries which are imported into this, which restrains international trade to the disgust of those peoples whom we are supplicating to do something for us on the money question. In the matter of tariff legislation this country acts independently, notwithstanding the growling of Great Britain, France and Germany.

Why can we not do likewise in regard to the money question, and be consistent Americans along the entire line? Such a course would consist with our dignity. If we yield to foreign sentiment on one subject, why not on all subjects? We yield to Great Britain on the money question, and it would greatly please her if we would adopt her revenue system and admit her freely into our markets.

Suppose gold should go to a premium were we to adopt bimetallism, a result about which there is so much pretended fear, it would only be a greater protection to our industries, a protection equal in percentage to the premium on gold.

Failure will be the inevitable outcome of the efforts of the commission just appointed, and it is to be hoped after that there will be no more talk about efforts to "promote" international bimetalism. There has been

quite enough trifling with our interests, and we hope the country will not be duped any longer by the twaddle about international bi-metallic conferences.

IS THERE A PLETHORA?

Those who favor the gold standard and do not believe we need a larger volume of money claim that the bankers have large sums on hand, more even than they can loan. If the banks are thus supplied, it cannot be denied that the people in general are destitute, that property values are low, that a large number of people are idle, and that idleness is constantly on the increase.

If the banks are plethoric what is the reason they cannot loan, when men are idle and property values and wages are low? The reason is obvious, that such rates of interest are demanded that no man can pay them in any business in which he may engage. In these days and under existing conditions profits are exceedingly small, and men cannot borrow money and pay the interest the banks demand. While everything else has gone down under the influence of hard times, interest rates have been maintained; the charge for the use of money has been kept up.

Can it be expected that there will be prosperity when wages recede which contributes to wealth production. Rates for money are maintained for money which does not produce wealth. In the proportion that interest is too high security for loans is impaired. No man can pay what is demanded for the use of money and pursue any safe enterprise. The money lenders are unsettling the enterprise of the country. They stand in the way of development of wealth by a policy of absorbing all and more than all that can ordinarily be produced.

The fact is, money is not plentiful; it is scarce; so scarce that those who possess any will not loan on realty for fear that property mortgaged will have to be taken in satisfaction, and if they do lend it is on such terms that the borrower is forced into bankruptcy.

Money and opportunities of securing employment are both scarce. It is very natural that under such circumstances wages should be low and that interest rates should be high. What the country needs is a larger volume of money and a broader field for employment. Let us have free silver coinage, which will give us more money, and assure the breaking down of exorbitant interest rates.

JAPAN'S FOLLY.

This nation which has been so flourishing under the use of the silver standard has been induced to change her money system, making gold the basis, but she retains the use of silver on a ratio of 1 to a little over 32, this ratio is based on the commodity value of the two metals in the London market.

The idea of establishing a ratio on that principle is absurd, for prices fluctuate, and often fall or rise very greatly; the ratio, therefore, is not stable. There can be no stability in money if its value is based upon the market price of the material of which it is made. Money value is regulated by law.

The action of Japan is a triumph of British influence, and is hurtful far beyond the limits of the Japan Empire, as it increases the demand for gold when the supply is not sufficient to keep up with the increasing wants of the world's business. The greater the extent

to which the gold standard is adopted and silver is rejected as a money metal, the greater will be the disparity in prices of the two metals in the markets, and relatively the scarcer will become redemption money, and the greater will become the purchasing power of gold. No doubt Great Britain will exert herself to induce China to fall into the gold column, and when that is done the bulk of Asia will be under the momentary control of Lombard street, London, the power of the Rothschilds will be complete all over Europe, the greater part of Asia, the United States and throughout all the British possessions and dependencies.

BANKERS' CONVENTIONS

There is a concerted effort on the part of the bankers of the country to shape the financial policy of the government. Mr. McKinley gave impetus to the movement by the appointment of a banker as Secretary of the Treasury, and by suggesting the appointment of a commission to propose a money system in his inaugural address.

There can be no doubt that the bankers are led to believe that they are relied on to propose that system.

Mr. Gibson, at the bankers' convention recently held in this city, attempted to classify the persons who are opposed to bankers and to present the reasons for their opposition.

Mr. Gibson and others need not investigate very far to find out the reasons why the masses of the people are opposed to bankers and especially to banks of issue.

First, all bankers, or nearly so, are advocates of the gold standard, which means a limited volume of money.

Secondly, they are for a limited volume because it enhances the earning power of their money. The National banks have shown a disposition to contract their circulation when the population and commerce of the country demand expansion.

Thirdly, bankers do not regard the public welfare in the slightest degree in devising a money system or in regulating loans and discounts. Their practices are supremely selfish.

When prices of property are low and employment is scarce bankers do not reduce interest rates, but maintain them so high that no one in hard times can borrow money to be put into enterprises that will yield a profit after paying interest. They make no effort to aid development, but on the contrary hold an attitude that suppresses all enterprise.

Were bankers empowered, as is proposed by the Secretary of the Treasury and bankers' conventions, to control the money volume the oppression of the people would be beyond anything Americans have ever experienced. It is not known in the history of the world that bankers were either humanitarians or patriots. During the war of the rebellion they supported the government only on terms that assured them profits. They made no sacrifice of their interests.

TACTICS OF THE GOLDITES.

In order to break the force of the prevalent impression that there is too little gold in the world to furnish the basis for an adequate supply of circulating medium, such a supply as will accommodate commerce, international and local, reports of rich finds or strikes are constantly promulgated. Were these reports true to the extent of one-half there would be a plethora, and the money changers would be devising some plan to keep down the volume

of gold to proportions that would not detract from the profits which the possessors of money desire.

No doubt there is unusual interest in gold mining, brought about by the depression in silver mining. Gold holds an unchangeable price in the market for the reason that it can be converted into money without limit, but as silver is used but meagerly at the mints its price in the markets is governed by the law of supply and demand for use in the arts and manufactures. If silver mining were profitable less energy would be displayed in the hunt for and mining of gold.

For two or three years immense finds of gold have been heralded from many parts of the world, and while there has been a considerable increase in production it has had no appreciable effect in enlarging the stock of gold at the money centers or among the masses of the people. Whatever increase there has been it is not more than equal to the enlarged demands of the world's business. There are those who extract comfort from the exaggerated reports, but it will be ephemeral, for all finds or rapidly exhausted and the field of discoveries is diminishing constantly. Nature, so far as we know, is not creating gold, and that which was created in the distant past is being rapidly exhausted.

MINING PROGRESS IN SONORA, MEX., 1896-97.

In the Annual Message of President Díaz to the Mexican Congress, on April 1st, he said that no other branch of industry has presented the development and progress that has been exhibited in the mining department. Out of the total of 5800 mining titles issued since the establishment of the new mining law (of 1892) covering 42,968 hectares or pertenencias, 2056 had been issued since April 1, 1896, covering 9766 hectares.

The number of mining titles applied for in Sonora alone, since the new law, was 2183—more than two-fifths, or 37½ per cent of the total registered in the republic.

The total exportations of minerals of all kinds, including gold, silver, copper, lead, coal, marble, etc., for 1896-97 reach \$71,000,000. Of the nearly \$6,000,000 of gold exported, Sonora furnished \$3,227,838.

The gold and silver production of Sonora for 1896 will show at least \$6,743,980, without showing that upon which no taxes are paid.

Since April, 1896, the production of both bullion and ores has steadily increased, and the records of the Sonora R. R. Co. show an increase in the freight and general traffic of 30 per cent over that of the year before, month by month. The search for mines has progressed steadily, and several important acquisitions have been made by investors of note, among which was the sale last August to the London Exploration Co., of the Grand Central and Amarillas property at Minas Prietas for \$1,000,000 gold, of which \$750,000 was paid in cash, equivalent to \$1,500,000 of our money. Another event of importance was the recent acquisition of the Santa Elena gold mines by English capital.

Other events of the year worthy of note are: the effort of American investments at Bacanora, where a mill is being erected; of French people at Caborca, where the French have a group of eleven gold mines and a stamp mill on the way; the renewed activity of Nacosari in behalf of the Copper Queen Co., and the beginning of work upon the new railway from Bisbee to Nacosari; the important new finds at Pílares, in the Sierra de Teras, be-

tween Fronteras and Bavispe; the very probable sale of the Dos Cabezas mines (the Harper mines) near Bavispe to English people: in this connection it is worth noting that the new Corralitos R. R. is expected to reach Carretas next June, which will greatly aid in the development of the rich mineral fields in north-eastern Moctezuma district, about Pílares and Dos Cabezas.

Renewed efforts are being made to enable mining capital in Brussels, and other European capitals, to acquire the celebrated Mulatos gold mines in Sahuaripa district. New gold finds and some prospective improvement is reported from the region back of Onavas and La Mesa. A 100-ton mill is spoken of to be put up by eastern people. An English company has established a mill and cyanide plant near Matapi in the past year, and a 5-stamp mill has been started by Calderon, near Batuc. The Osterman mill, at El Cajon, a few miles southeast of Batuc is running steadily. The telegraph line is to be immediately extended from Banamachi to Moctezuma, (Oposura) Cumpas and Granadas, and in the near future it is expected to pass the rich mining districts of Lampazos, Batuc and Suaqui, ultimately reaching Sahuaripa.

No new discoveries are reported from the Sonora River region (District of Arizpe), but considerable activity prevails, not only at Santa Elena, but also at El Carmen, where Senor Pedrazzini continues to produce and ship remarkably rich ore, and at Santa Rosalia, where a California company are about to erect a cyanide mill. The Cranz brothers are about to start their mine, Cerro Colorado, near Baviacori. They are at present operating another mine at San Juan de Sonora, in the Moctezuma district.

In the south, a good deal of prospecting is going on in the Matapi range, between Matapi and Sorzopa, with very hopeful results. This was a once abandoned country. Beneficiation of ores has begun at La Ramada, near Santa Barbara. Further south, in the new region between Tecoripa and Javier, high grade silver ores are being successfully exported by Platt, Flores and others. A good many locations of "carbonate" mines have been made in that section, stimulated by the prospects of a smelter being located somewhere on the Sonora railway. The smelter scheme has secured franchises and privileges, and is said to be in the hands of good people. Another scheme that will be a blessing to miners at Minas Prietas is that of bringing water into the camp. This scheme is now in the hands of Baron Bergendahl.

Between Las Prietas and Zubriate is the Bronzuda mine, now producing high grade ore, some has been sold carrying 1700 ounces of silver per ton. The mine belongs to Munoz Bros., of Hermosillo. The re-opening of this ancient mine is stimulating similar efforts with regard to other historic mines. A home company is preparing to open the famous San Jose de Gracias gold and silver mines, shut down in 1811 on account of influx of water, and never touched since.

Important mining sales are rumored at Prietas.

South of San Marcial, successful prospecting for gold is being carried on, and finds of gold and copper veins are reported as very promising. The Batamote mine, in that vicinity has been bonded to Pedro, Negro & Co.

Recently a good deal of energy has been displayed in prospecting and denouncing gold veins, as far south as Alamos and El Fuerte, by Americans.

Immediately bordering upon Sonora, but in the state of Chihuahua, is the silver and gold mine of Don Martin Salida, which has been sold for \$200,000. It will be remembered that he once sold the mine for 325,000 silver dollars, when the discount upon silver was not more than thirty per cent, but would not take checks or drafts; nothing would do but that he must see and count the silver dollars in Alamos. The New York parties who purchased gathered all the silver in Alamos, and made up the deficiency by bringing in a cargo of dollars in a vessel from Mazatlan, but when the money was all placed before Don Martin some difficulty arose and the trade was declared off, so that the purchasers had to ship their dollars back again. Afterwards, the mine was sold for \$500,000, but the purchasers wanted 90 days' time, which Senor Salida could not see the need of. So just before his death, he let it go for \$200,000 in silver. The mine is within six leagues of Palmarejos.

Following close upon the trade of the Sonora railway to the Southern Pacific Company, comes the prospect of a new line to be built from Chihuahua to the Yaqui delta, just in time to benefit the American colonists who are taking up lands there. The great ditch is now opened and supplying water as far down as Cocorit, and this immense enterprise, with the smaller irrigation canal and pumping works of the Cranz Bros., will soon result in peopling the beautiful valley of the Yaqui delta with American colonies, and next year will see Sonora nicely supplied with cheaper breadstuffs and all the products of American agriculture and dairying.

There are prospects of a sale of La Dura for \$800,000. It is paying from \$300,000 to \$400,000 a year in dividends—why should it not be worth \$800,000? Mr. Graff's heirs' representatives are here now in reference to the matter. It is not known whether the proposition includes the coal fields of La Barranca and Santa Clara, which estate covers one league square.

An event of the year has been the pacification of the rebellious Yaquis. Prospectors from the United States are now about to enter and prospect the Bacatete range, which is the southern extremity of the same range in which lie the Baroyeca mines, the Prietas gold field, the Zubriate, the San Jose de Gracia, and other celebrated districts to the north. The Bacatete has never yet been prospected by anybody.

The Boleo Copper Company, across from Guaymas in Lower California, is prosperous. The Cranz Bros. are running their mill, San Juan, in Los Angeles Bay. Some new gold mines at San Francisquito, still north of the Cranz mines, are producing good ores.

In the Altar district, there is some promise of the Sierra Pinta gold mines, near the head of the gulf, changing hands shortly, and that a responsible company will take hold of them. In all probability, the communication with these mines will be by sea, as they are within 20 miles of the coast, where fresh water has been found. The desert on this side of the mines is long and difficult, so that only the very highest grade of ores could be shipped overland to Santa Ana. An American company is reported as being ready to pay \$250,000 for the camp, as soon as the titles can be made good. There is also a project on foot to bring the soda beds of that region into exploitation. The only effort ever made before was that of loading a vessel with the soda, bound for Europe, and it sunk on the way. Now the soda has been sampled and analysed

again, and a new effort is being made to export it. A railway was once surveyed south from Tucson, through El Plomo, by the salt and soda beds and the antimony mines to Port Libertad, at a time when the Santa Fe Company was directing attention this way. It would be a splendid project now for the S. P. The celebrated Sturgis mines, with immense values blocked out, are also on this route, but the scarcity of water has kept capital from taking hold. They are at San Felix.

The Trio and Campana mines in Altar district are also being opened by English companies. The Trio had a remarkable history down to 1848. The English directors of the Campana are reported as more than pleased with the Campana, which lies south-west of El Plomo; even regarding it as better than anything in South Africa or West Australia. A map of the gold belt of Altar was published in the *Engineering and Mining Journal* of March 13th last.

The recent Papago trouble, at El Plomo, seems to have been nothing serious—only a few straggling cattle thieves.

The gold discoveries just above Yuma are in the same belt as the Altar mines, and show a drift in this direction. By another year the Altar belt will begin to show something of its ancient activity. Several new schemes are already well advanced, and will shortly make the district noticeable to capital.

In the Magdalena district, the Esperanza gold mines, 30 miles north-west of Imuris, will be in operation as soon as privileges can be had for the entrance of a large mill.

Unfortunately for the poorer people of Sonora, the wheat and bean crop was partly frozen in some localities during the late cold, so that prices may advance 30 or 40 per cent, but the increased efforts in mining may in a great measure offset this.

Manufacturing is on the increase. The Los Angeles cotton mill of Moller & Co., on the San Miguel River, north-east of Hermosillo, has been increased in capacity, and now makes blue jeans as well as white cotton fabrics. Flour milling is increasing, especially roller mills. The large and successful roller mill at Hermosillo has stimulated the erection of others at Ures and other places—even as far out as Granados on the Bavispe river.

The Seri difficulties are about ended. Near Tiburon is a band, there are a very few left; but there is every promise that they will surrender in a little while, and be sent to join their brethren who were some time ago sent down to Salina, Santa Cruz, near the Guatamala line. The number left is not over 200, and they work on the ranches of Pasqual Encinas, when they cannot live by fishing. These depraved Indians have not been treated well by the Mexican residents, owing to the fear the latter have of their poisoned arrows.

chinery and engine arrive, it will commence operations.

C. E. Gyger, who has operated largely here, leaves for South Africa, to enter into mining operations there.

The Henry mill has been refitted, and is again running. Under the new arrangement, the tailings are carried by an elevator to the roof to the flume which carries them away.

The Visalia Company have their new ten-stamp mill in place, and will soon be ready to run again.

The copper mine at Colorado camp is to be sunk to the depth of 100 feet, and work commenced next week.

The Panamint country seems to be receiving the principal part of the influx of prospectors just now.

OLD CORRESPONDENT.

MEXICO.

CITY OF MEXICO, April 17, '97.

EDITOR JOURNAL:—Foreign capital continues to find investment in the mines of Mexico. Colorado capitalists have just completed arrangements and just taken hold of a group of 48 gold mines, known as the Rescate group, situated at Parian in the state of Oaxaca. The mines are to be worked and thoroughly developed under a lease of one year, with the privilege of purchasing same during that time at the price of \$200,000, gold. These mines have long had the reputation of being the richest gold mines in the state of Oaxaca. They have not been worked for several years, as the owner was averse to putting up the money necessary to purchase machinery and pump out the water.

The ore in the Rescate mine, which is the principal one of the group, is similar to California gold ores, quartz heavily sulphureted. The main ore body is about 3 feet in width, the ore averaging about an ounce troy per ton, with streaks from 3 to 6 inches wide, running from 8 to 12 troy ounces in gold per ton.

Mr. Douglas Gray, who is in charge of the workings, has a large force of men employed to put the mines in good working condition, and should his investigations prove satisfactory, the Colorado Company will erect an extensive reduction plant for treating the ores at the mine. The location of these mines is very favorable, being within a half mile from the R. R. station on the line of the Mexican Southern road.

Messrs. Cook, Clark and Kennedy, American prospectors, who have been working some gold mines at Santa Katerina, near the Rescate group in Oaxaca, have encountered a large body of gold ore, yielding from 2 to 4 ounces of gold per ton. They have shipped about 10 car loads of this grade of ore to the smelter at Aguas Calientes, with satisfactory results; but as the ore is of a silicious character, on which high treatment rates are exacted, they are negotiating for the erection of a mill to treat the product on the ground.

The Alacran mine of Zacualpan, in the state of Mexico, is now shipping ore to the Lewis Company Agency at Toluca, running about 850 ounces silver, and 6.5 ounces gold per ton. About 6 car loads of this ore have been shipped during the past three months, and the company is paying monthly dividends of \$1000 per vara.

The San Juan y Anexas mine of Zacualpan, the property of Mr. Telesforo Garcia, is about to be sold to the Rothschilds for one million dollars gold.

To illustrate the possibilities for making money in the mining line in Mexico, with small capital and a little hustle, the experience of Mr. Alfred Oest, who is now in this city from Oaxaca, will probably interest young Americans in the States, who find it hard to make a living. Some six months ago, Mr. Oest was in the employ of the Furness & Lewis Co., as ore-buyer at Oaxaca. In the course of his ore transactions, he advanced a few dollars to some Mexican prospectors who who brought him samples of ore from time to time, when one of them struck a pocket of ore near the surface, about 45 miles from the city of Oaxaca, assaying 9000 ounces silver and several ounces gold per ton. He proceeded at once to denounce the mine, and put a force of men to work to take out a car load. This car load netted him some \$10,000. Since then he has been shipping regularly a car load of ore per week, netting him about \$5000 each, and a car load per month of high grade ore, running 1400 ounces silver and 3 to 4 ounces gold per ton, and worth about \$25,000 per car.

Mr. Oest has now resigned his position and is operating in other mines and coffee plantations on a large scale.

What can be done in mining in this country can also be done in manufacturing, mercantile and other enterprises. Mexico is on a silver basis, her dollar is worth but 48 cts. today in gold standard countries, but her undeveloped and great resources afford a better field for investment than the United States does on a gold basis today. If any one doubts the prosperity of this country on a silver basis, let him take the trouble to investigate the facts, and he will find abundant proof of the truth of this assertion.

MINERALOGIST.

NEW MEXICO.

CHLORIDE, SIERRA CO., April 16, '97.
(Apache Mining District.)

EDITOR JOURNAL:—On Tuesday afternoon Manager Ed James started the James-Wing 5 stamp mill, in Miner creek some three miles northeast of town, on ore from the Sheffield & Worksapp mines and expects to keep the mill in full operation for some months. They are working on ore that shows an average of \$15 per ton in gold and a saving of 85 per cent. of the assay values are being made. As soon as the new concentrator arrives they will be in position to treat custom ores from this camp.

Messrs. Clark & White made a rich gold discovery, about 200 yards from town, that will probably result in one of the most important gold finds in this section for years. The ledge was uncovered during the recent heavy rains.

Hon. Frank A. Reynolds and J. D. Bone have closed options on some of the best mining properties in this district, and everything points to some large deals being closed in the very near future.

Dr. Elmer Blinn is pushing forward development work on his Argonaught mine in Chloride creek, and assay returns are very flattering.

Joseph Oliver, of Roundeville, some five miles northwest of town, who owns valuable silver-copper properties, has had an offer from eastern capitalists and may decide to accept. Joe has one of the best properties in the camp.

Your correspondent was shown an assay certificate by one of our miners which gave

CORRESPONDENCE

The Desert.

GARLOCK, CAL., April 23, '97.

EDITOR JOURNAL: The small mill at Mesquite Spring has passed into the hands of Mr. Thomas, of Los Angeles, and will soon be moved to Garlock.

A new sample mill has been put up at the McKiernan mill, receiving its power from that mill.

The new cyanide plant is nearing completion, and as soon as the new pumping ma-

290.87 oz. gold and 915 1/4 oz. silver per ton. The miner in question refused to state the exact location of his strike, but we are informed that the ore came from the northern part of the range. Probably from Grafton.

J. D. Bone has arranged to do some further development on his Little Star mine west of town, also improve his Venezuela group of mines near the summit of the range.

Mr. Jno. Petre and the Yaple Bros. are working away on their properties with very good results.

Mr. Westy Petersen never loses a day, and constant work is developing one of the most promising leads in this section.

J. D. BONE.

The report of the output of the Transvaal mines for the month of March is very encouraging, as it shows an increase in the output over the previous month of some 21,000 ounces, and over the corresponding month of 1896 the increase is 59,000 ounces. The figures for the output for March are 232,067 ounces.

Superintendent Daggett of the San Francisco Mint has an order from Director Prescott for the coinage of 800,000 silver dollars.

Miscellaneous Mining News.

ARIZONA.

The Lookout mine, four miles south of Kingman, is a promising property. Paul Maguire is working it under a lease.

Thomas Tyrall has a good silver prospect in Wallapai mountain, Mohave county. Late samples of ore worked over 1,100 ounces silver per ton.

J. W. Tuck has a good property in the Pine Shade mine above the Needles on the Colorado river. He has just shipped a car-load of rich ore to the sampler.

A large body of ore has been found in the White Mountain mine, averaging \$30 per ton. This property is in Gila county, and is one of a group of good small mines in that vicinity.

There is some agitation at Prescott in regard to the construction of a railroad from that place to the Big Bug onyx mine. Talk of a town site at the mines to be called Mayersville is also rife.

Chillson & Birchett's mine, known as the "85," located in Gila county, shows ore running from twelve to twenty-four inches at a depth of 215 feet. It horns \$100 per ton. They have at present seventy-five tons of fine ore ready to mill.

The new owners of the Vulture mine it is said, will sink a new shaft on that property, and will prospect the property to a greater depth than has heretofore been done. They also propose to put in a new 100-ton cyanide plant to work the old tailing from the mill.

Malcolm McLeish has had a bonanza in the old Vulture tailings at Smith's mill. Parties who are somewhat familiar with the workings of these tailings estimate that Mr. McLeish will clean up not less than \$75,000 in the operation of his cyanide plant, and think it will exceed that amount.

The Barnett Bros. are working a mine in the Salt River mountains, about twenty-two miles south of Phoenix, which gives promise of becoming a paying property. The mine was located several years ago, but nothing was done with it until lately. It has two shafts, one forty feet, the other twenty-six. Assays of ore taken from the surface ranges from \$25 to \$100. The ledge is two feet wide and enclosed by good walls has an appearance of permanency.

The copper Wedge mine, located three miles north of Globe, owned by Charles Banker, is one of the promising copper claims of Globe district. There are four men at work. The main development is a tunnel, in 160 feet, and which will be driven to a length of 250 feet to strike the ledge at a depth of 200 feet. The ore after being sorted runs 25 per cent in copper and is very desirable for smelting. Mr. Banker has arranged with the United Globe mines to buy about 25 tons of ore which has been extracted.

Pearce.

This camp is going up hill very fast. A new steam pump has just been put in. The Commonwealth Mining company is breaking ground for the erection of a mill; the Fitz Johnson company is working ten men at Tomalson Hill; Martin, Masters and Barret have struck rich ore on their claims on Tomalson Hill; Martin and Masters also have six claims in the Dragoon mountains, six miles from here, the ore from which runs high in gold and silver.

CALIFORNIA.

KERN COUNTY.

A clean up of nine tons of rock, from the mine owned by Angus Mathewson, produced \$875, and the development work has just been fairly started.

There is a four-foot ledge of rich ore in the Custer mine about twelve miles from Garlock. Messrs Alf Ellis and Lance Underwood, the owners, are out at the mine doing some development.

Harrison Yarnell has filed a water location for 150 inches of the waters of a stream about a mile southwest of the Esperanza mine in the Sageland mining district.

At a meeting of the creditors of the Amalie mine, above Caliente, J. B. Ferris of Caliente, was appointed assignee, bonds were fixed at \$20,000. Work in the mine will be continued the same as usual.

Rand District Records.

The following is an abstract of the claim records placed upon the books in the office of the Recorder of Rand district, for the week ending Friday, at 12 m., April 30th, as reported by the *Randsburg Miner*:

M. J. Perry claimant Acme mine.
Chas. Ehrenfeld claimant Elenora mine.
C. W. Anderson claimant Merrimac mine.
A. M. Ericson claimant Adeline mine.
Fred Crawley and J. C. Crenshaw claimants, Toby mine.
A. N. Farris claimant Farris mine.
F. F. Burton and G. Mahone claimants Dolly mine.
Same claimants Gold Standard mine,

John C. Krumlin claimant Sleepy Hollow mine.

L. Thurston et al claimants Right Hand Bower, Golden Bar, Golden Standard and Ella B. mines.

Chas. Burch and John Stevens claimants Frankie mine.

G. A. Coenan et al claimants Claude Belmair mine.

E. C. Parker et al claimants Waltham mine.

D. F. Brooks et al claimants Flora mine.

J. A. Snyder et al claimants Hidden Treasure mine.

C. W. Anderson and J. A. Snyder claimants Hidden Treasure mine No. 2.

A. G. Arnold claimant W. W. mine.

Wm. Wright claimant Ramblause mine.

A. C. White claimant J. St. Clair and S. Sidney mines.

Pauling Goller and M. G. Perry claimants Fritz mine.

M. M. Pomeroy claimant Annie mine.

W. H. Richardson claimant Albion mine.

Thos. H. Ward claimant Ada B. No. 2 mine.

James McClintock et al claimants Black Diamond mine.

F. M. Doyle and Chas. Burch claimants Bessie of the West, and April Breeze mines.

A. G. Arnold claimant Gold Valley mine.

G. H. French claimant Giant mine.

A. G. Arnold claimant Sun Flower mine.

W. C. Bogart and H. D. Morton claimants Humburg mine.

Elmer White and Fred Hinke claimants Little George mine.

M. F. Miner claimant Linda Vista mine.

W. R. Harman claimant Fannie K. mine.

Little Butte Incorporation.

Articles of incorporation were filed this week by the Little Butte Mining and Milling company, the directors of which are Warren Gillelen, E. T. Earl, H. K. Gregory and E. Lee Allen of Los Angeles W. J. Clark and H. C. Oakley of Ontario, Cal., and J. W. Oakley of Toronto, Can. The capital stock of the corporation is \$500,000, divided into 500,000 shares of the par value of \$1 each. Of this amount \$400,000 has been actually subscribed. E. Lee Allen, W. J. Clark and J. W. Oakley each subscribed \$100,000, and H. C. Oakley \$99,997.

At a meeting of the directors the following officers were elected: W. J. Clark, president; E. L. Allen, secretary and manager; H. C. Oakley, vice president.

LOS ANGELES COUNTY.

The Red Rover Company, at Acton, is putting up some buildings and other improvements upon their property. The shaft is down over 700 feet, and the ore body in the seventh level is much larger and richer than in the sixth.

The Pearson mine at Acton has received a lot more machinery, and when the mill is completed, it will be a splendid plant.

The Puritan mine people, of Acton, have at last succeeded in pumping out their mine to the 150-foot depth, and have taken out some rich ore. They have a good steam pump at work now. The Puritan was formerly known as the Union, and is a good property.

RIVERSIDE COUNTY.

R. C. Jacobs, who has been operating in the Salton country, has located five claims in

the Chuacawalla Mining district, to be known as the Monday, Sunset, Emma, Break of Day, and Sunrise.

The mountains in the eastern part of Riverside county are full of prospectors.

Dale City Notes

(Regular Correspondence of 'The San Bernardino Sun'.)

DALE CITY, April 14.

Interest in the Virginia Dale is increasing every day. Since your correspondent was last in this coming camp many changes have taken place. Besides the number of men in mines being doubled, a moderate building boom is on foot which is healthy since above quarters are intended only for a central or distributing point for those actually in the camp and at work. Actual work on mines that have been located and held for some time has progressed rapidly to say nothing of new finds. Among the latter is a strike made by V. E. Forker which is located about three-quarters of a mile northeast of the Leoti, the justly famous mine owned by Colonel Sweesy and Dr. Bedford. That it is in a good neighborhood goes without saying. Mr. Forker is particularly fortunate in his discovery since the ground has been run over for several years, and also since the ore carries a big percentage of free gold, second only to the Leoti. Mr. Forker has done some work on his find and expects to push it when he returns to the Dale next week.

Messrs. Minick and Kelly are running a tunnel on their lead which is opening up very satisfactorily.

Geo. Dillon has a number of men at work on the Helen. This claim is in the Pinto mountain and is considered by all who have seen it to be a very promising prospect.

Kenuean, Pendegrast and Kelly are working right along and have every reason to be more than well pleased with the outlook, since they have over \$10,000 worth of ore on the dump, to say nothing of what is in sight.

One of the latest strike has been made by F. C. Baird, G. Wright, Chas. Stewart and F. M. Lingo. These gentlemen have located and are now working on the claim which is situated in the Bullawano mountain. When your correspondent saw the prospect it gave every indication of making a very valuable mine. Where work was commenced two feet of ore was found which assayed very high. This claim is known as the Angelita. Messrs. Bert Schroder, Henry Possitt and J. Regan of of Pomona were on the ground when the Angelita was found and began immediately to prospect for the extension, which they found, and are now working on.

Dale City is enjoying a moderate building boom as above. The postoffice has been in operation for four weeks, with a bi-weekly mail from Amboy on the Atlantic and Pacific railroad. About 500 letters are sent out every week. The stage is getting all the passengers it can carry. F. C. Baird's grocery is doing a business which far surpasses his most sanguine expectations. He is in Los Angeles now buying a general line of merchandise. Mr. Baird will sell groceries at San Bernardino prices, plus freight. It is unnecessary to state that every one in the Dale will patronize the genial Charley Baird.

Mr. Baird is also sinking a well at his store, which will be of great advantage to miners and prospectors. Last Sunday your correspondent saw teams waiting at Lyons well for water till long after dark, for the simple reason that they could not get the water out fast

enough. Mr. Baird will take a pump and tank with him on his return and for merely a nominal sum will sell water. It will be arranged so that a wagon can be driven up and barrels filled in a few minutes. A force of men is working on the Ladies mine, which is down 25 feet and looking splendid.

The Dale City Saloon is now in full blast, dispensing rattlesnake antidote, very fortunate, since this is the "snake" season of the year.

The Dale City Glee Club entertains the denizens of the town after old Sol falls behind Grayback and the air becomes delightful, as it can do on the Colorado desert only.

SAN BERNARDINO COUNTY.

While digging a well, about half-way between Randsburg and Kramer, the Santa Fe railroad people made a good strike in gold, at a depth of 140 feet. The gold was encountered in a bedrock formation.

SAN DIEGO COUNTY.

Henry Combs & Co. have put up a plant at Chihuahu Valley, 60 miles east of Temecula. It is a two-stamp mill, with a daily capacity of eight tons. The ore is of good grade, going \$50 per ton, and they have 100 tons in sight.

Parties are at work three miles east of Escondido, with a patent washer run by a gasoline engine, washing out some old tailings left by the wasteful pioneers some 50 years ago. There are eight or nine miners engaged, and they claim that they clear, above all expenses, \$150 per week. They have rich dirt enough to last all summer, after which they propose to go to Ensenada, Lower California, Mexico, where they propose to operate.

Messrs. Clark & Ridge are at work, 20 miles west of Murrietta, developing a rich quartz mine.

Mr. J. S. Small, who owns some valuable property adjoining that of Clark & Ridge, recently sold a quarter interest in one of his claims for \$1000 cash.

There is quite a number of prospectors running over the broken mountain spurs, between Elsinore and South Riverside, and some very flattering discoveries have been made.

TOULUMNE COUNTY.

The Alameda mine, near Columbia, owned by C. C. Robertson, was started up last week.

The mine owned by Hawk Gale and Tom Bluett, of Jackass Hill, produced over \$6000 during the month of April.

Messrs. Mapes and Peters are operating their gravel mine at the head of Woods Creek. The prospects are flattering and a new "back channel" is looked for. Several other placer mines are being opened up in that vicinity.

Work on the Nerry mine, at Italian Bar, will be resumed shortly. The lower tunnel, which is being run to tap the chute, is now within 20 feet of the same. This mine has been a good gold producer.

The Jumper mine, near Sonora, is having a new air compressor put in.

Sinking in the main shaft at the Mammoth mine, near Sonora, has been continued, and a new tunnel is being run.

Dr. Redding, of the Tarantula mine, at Sonora, will shortly erect hoisting works, the

fine body of ore unearthed warranting such a course

COLORADO

At Leadville, Colo., the mine owners have adopted a system of drainage, and will pump out the mines and resume operations as soon as they are in condition. \$50,000 has already been subscribed for the purpose of drainage

Big Mining Deal

The filing of the articles of incorporation of the Corncracker Gold Mining Company last week is the consummation of the sale of several mines at Empire, which has been under way for several months.

The properties, says the *Denver News*, include the Tenth Legion group, and the Gold Dirt, Equator and Dunderberg groups, all located at Empire.

The consolidation was brought about through W. H. Smith, an Indianapolis bicycle manufacturer, who has been spending the past two years at Idaho Springs. It was, however, hastened by a pending lawsuit to be brought by the Dunderberg claim against the owners of the Tenth Legion, for infringing on the Dunderberg, which claimed that the Tenth Legion people were in their territory and taking out mineral to which they had no right.

While the exact figures are not obtainable, it is thought the purchase price was close to \$100,000 for the group.

Fred. E. Himrod, owner of the Lamartine mine, is president of the new company; W. H. Smith is vice-president and treasurer, and L. Hanchett is manager and secretary.

"If I were to give you the width of the streak," remarked Mr. Hanchett, the readers would not believe it, especially when they are conversant with the veins in Clear Creek county. Excepting at the Alice mine, our streak is the biggest in Clear Creek county. The lode is on an average of 100 feet wide, with streaks of pay ore ranging in width from eighteen to thirty-six feet on either wall, aside from what may be found between."

There are two principal lodes in the group, both carrying values exclusively in gold, the silver contents of the ore being not more than two ounces per ton. The vast bodies of the ore are high grade concentrating, and can be treated by that system within half a mile from the mine at one of the best concentrating plants in the county.

"We not only consider this consolidated group the best in Empire camp," remarked Mr. Himrod, president of the new company. "but everyone conversant with the properties says the same. These mines produced \$70,000 worth of mineral last year. We have no desire to parade our intentions. The company is a close corporation, and we will let our work tell its own story, just as it is doing at the Lamartine mine, where we are giving employment to 150 men. We propose to develop the mine and place it in the front rank as the greatest producer in the county. We will put in a new boiler and add an air compressor and drills at once, and by the first of July will be sinking the main shaft another 200 feet."

(Extracts from Mining Investor's Pitkin.)

The Cleopatra has been continuing its work all through the dark times since 1893 with a large force of men, under the superintendency of Alfred Plewes, and has been shipping ore and paying dividends ever since. The Cleopatra belongs to a Chicago company, who are

running a tunnel which is now in nearly 700 feet, for the purpose of catching the contact on which they are now working in the mine. They will thus avoid the hoist to the surface which they now have to contend with.

Alma.

The past season, the Winrow Company has constructed a mill of 65 tons daily capacity, for treating the ores of their own mines situated in Buckskin gulch, about two miles above Alma. Mr. Boody, the manager, is highly pleased over the results of their mill, and says it handles a larger tonnage of ore daily than they expected, and that the saving is fully up to their experimental tests, which were made in a large way in carload lots before the construction of the mill.

Trinidad.

J. M. Branstetter of the Golden Treasure is going steadily ahead developing his mine, and gets excellent results. He has the vein now four feet between walls. The quartz containing hematite. They are preparing to sack ore which will go something over \$100.

The owners of the Southern Slope are pushing work on their property. They have reached a depth of 45 feet, and are arranging to put in a whim. Two shifts were put to work last week. The owners expect to soon be able to ship ore.

Considerable work has been done and is being continued on the Double Tree and Rainy Day claims, in Bitter Creek gulch. The tunnel is in nearly 50 feet, and the vein is now three and one-half feet wide, with well defined walls. The ore assays well.

Aspen.

The Smuggler management is very active at present. The cross-cut running from the Smuggler and Free Silver to cut the vein at the 1200-foot level has not yet reached the mineral. Three shifts on machine drills are working steadily.

The Smuggler has the largest stope of mineral of any mine in the world. The miners are now said to be working in a stope which is 150 feet wide. The mineral here is of a low grade, but it is a good concentrating ore.

The Smuggler concentrator is treating 130 tons of ore a day. A new bumping table with a side wash has recently been put in for cleaning middlings from other machines. This table can also concentrate crude ores. Manager Hallett is very well pleased with its work. Its action is similar to that of a gold pan, and its capacity is from 7 to 20 tons in 24 hours.

Lake City.

Another large chunk of rich ore was brought down from the Hidden Treasure during the past week by P. F. Crowley, one of the contractors now working on this mine.

A good judge of mineral says that this piece of ore is 100 per cent richer than the one that was brought down three weeks ago, and the chunk that was brought down at that time assayed 1459.8 ounces of silver. The Hidden Treasure is an extension of the Ute mine, and although at present the ore in the Ute is mostly galena, the Hidden Treasure ore would hardly be recognized as being taken from the same vein. John McCombs of Leadville is at present looking after the work on the Hidden Treasure for the leasers. Mr. McCombs says they have a large body of this ore.

LOWER CALIFORNIA.

The Real Mining District.

There is considerable activity in the old Real mining district. Mr. F. M. Bradshaw last week let a contract to the Espinosa brothers of the Real del Castillo to sink on the shaft of the Pueblo mine to the depth of 100 feet. The shaft is now down 62 feet, and the old works will be retimbered throughout.

Dr. M. T. O'Clery has denounced a claim near the town of Real, known as the old Tunnel mine.

Ramon Cesena is now operating an arastra by water power. This arastra has the unique distinction of being the only enterprise that derives its motive power from water on the Peninsula. He is also doing some development work on the China mine.

The deferred annual stockholders' meeting of the San Fernando Copper Mining and Smelting Company, operating in Lower California, will be held at the office of the company in Colorado Springs, Colo., May 4th, for the purpose of electing a new board of directors.

The great Boleo copper mining company of Lower California is still very much in evidence in Paris. Last year it paid dividends that amounted to just about 18 per cent, and the probabilities are that it will even do better this year. The company is essentially a French corporation, and is somewhat of the pride of the French mining world. The 500 franc shares were selling at 1925 francs the other day at Paris and they are not easy to get at that price.

MEXICO.

Minas Prietas.

The Prietas mine is shut down for a clean-up.

The big water dam between the Amarillas and Creston is being repaired by the skilled hands of Joe Thompson.

The Colorado Mining Company is getting ready to start the Colorado mine once more. They will commence in a few days to repair the incline shaft and retimber the old stations.

The new twenty stamp and 5-foot Huntington mills are now working the new extension of the Amarillas mine. The tramway between the Amarillas and Grand Central is about completed.

The narrow gauge railroad reached the Creston mine last week, and switches are being put in for the woodyard on the north side of the hoist. They have also completed a spur to the Colorado mill.

Butt Lary, engineer of the Creston hoist, has bonded a big mining property to a San Francisco company, which lies three miles south of Prietas. A rich strike was made last week adjoining this property.

A great body of ore has been struck in the west drift of the Amarillas on the 500-foot level, which is being run to connect with the Grand Central shaft. The Grand Central shaft is connected with the 400-foot level of the Amarillas now.

Frank C. Barnum and Samuel W. Bonner, of El Paso, Texas, recently discovered what may prove to be a great silver mine in the near future, about 50 miles south of El Paso, in the state of Chihuahua, about 300 yards

from the line of the Corralitos railroad now building. From assays made by D. W. Reckhart, of El Paso, values of 57 ounces of silver to the ton were obtained. The values are in the form of a chloride.

Mr. Barnum has returned to his property prepared to do some development work on the same. The assays were taken from the grass roots, and the owners think that the property will develop into a fine paying proposition, as the indications are that they are true fissure veins.

The Mines of Coahuila

About five miles from Monclova, Coahuila, and distant some two miles from the Mexican International Railroad, there is located a mine called El Peru. According to tradition, this mine belonged at one time to the Spaniards, who ordered it to be destroyed. By mere chance, it was discovered by a prospector, working in the interests of Lieutenant Colonel Juan J. Villarreal and Bernardino Zertuche. The mine has a depth of 125 feet, and ore taken from it by the finders runs 25 per cent in lead, and 640 ounces silver to the ton. It also has the appearance of containing gold, but it has not yet been assayed for that metal.

Another very rich property located on the same Cerro del Mercado is the Mina del Agna, which, at the time of its operation, 1856, produced about \$100,000,000, and which, while still in bonanza, became submerged with water. This caused work to cease, and the mine was abandoned. Some eight months ago, however, Mr. Frank B. James organized in the States a company for the purpose of draining the mine. The company commenced operations at once, and for two months has been driving a tunnel for the purpose of striking the principal vein of the mine. It is thought that in May or June this work will be successful, and that the tunnel will have reached the vein and drained the mine. The last ore taken from this famous mine was treated at Monclova, and it is stated on reliable authority that 79 pounds gave a return of 70 ounces in silver.

Good results are being obtained from the work in progress on El Potosi and Cuba Libre, at the hacienda of San Blas. From tests made on samples last month assays were had showing 60 per cent lead and 52 ounces silver to the ton. The owners will be visited in a short time by Mr. Salvador Malo, a banker of Mexico City, or by his representative for the purpose of endeavoring to secure the property either by purchase or lease.

Gen. H. Charles has discovered on the Cerro del Mercado a mine called Sirena, assays from which show that it runs high in zinc. Negotiations for its sale at \$50,000 cash are now pending with an American company. On Cerro de Potrerillos, four leagues from Monclova, Gen. Charles, associated with Lic Antonio de la Fuente, is the owner of La Libertad mine, the ore in which, according to the assays made by Mr. S. D. Bridge, runs four ounces gold and 51 silver to the ton.

On Mt. Santa Rosalia, at Bajan, four mines are being worked at present, known as Hidalgo, Favorita, Cubana and Tolteca. The ores from these mines average 30 per cent lead and seven ounces silver to the ton.

For the purpose of working the large number of mines which have been discovered on the hill Panuco, sixteen mining companies have been organized, having altogether holdings amounting to some 4,000 claims.—*Two Republics.*

NEVADA.

It is reported that the Silver Peak gold mines in Nye County have been sold to an English syndicate who propose to develop these properties on a grand scale.

Thomas Mitchel said that the work on his mines in Western Nye is pushed with energy, and that these properties are looking very well. He expects to start up the mill in a short time, when bullion shipments will be in order again.

From Hon. T. J. Bell it was learned that the Gold mines in Ione district are looking tiptop. The work of development is being prosecuted with vigor, and the mill is running constantly on ore from these mines. Considerable quantities of gold bullion have been shipped from this mill, and it is expected that the bullion output will be large during the present year. Mr. Bell also said that the Mayette gold mining property is looking well, and that the mill will be started up soon on ore from these mines, and bullion shipments will be made regularly.

Rich Willow Creek Mine.

Fred. Richter returned to Winnemucca last week from Willow Creek, where he has been looking at some mines. He says that H. H. McColley and J. J. O'Connell have one of the most promising mines ever discovered in the Rebel Creek mining district. It is in the Santa Rosa range, between Skull and Flat Creeks, and was discovered last fall. Since that time the owners have been working energetically upon their claim, and now have an incline down 75 feet on the ledge. They are also running a tunnel to connect with the incline. The ledge proper is very wide and carries two very rich ore streaks, in one of which gold, and in the other silver, predominates. The streaks are each about 10 inches wide, the ore assaying from \$100 to \$200 in silver and from \$40 to \$125 in gold per ton, being very free. The owners have made one shipment and are now taking out ore for another. —*Silver State.*

NEW MEXICO.

A. Wallis is reported to have a rich strike of silver ore on the Cedar Grove property. The ore is said to run over 300 ounces.

There are fifteen carloads of lumber and mining machinery in Kingman railroad yards awaiting shipment to the up country mines.

News from Taos is to the effect that a great deal of placer mining will be done this season on the Rio Grande. The entire country is entering upon an era of progress and development never before known or even hoped for.

The Golden Giant mining company at Pinos Altos has between 40 and 50 men on the pay roll. Most of the work is being done on the 350-foot level. Sufficient second-class ore is being extracted to keep the mill running one shift. The first class ore, which is heavy copper and iron pyrites, is shipped to the Silver City Reduction works. A shipment of fifteen tons was sent down last week. The first class ore runs about two ounces in gold per ton.

The American mine will soon have four new Frue vanners, 25-horse power hoist, two Common Sense automatic feeders, an ore

crusher and a 40-horse power steel boiler. The working shaft is being retimbered and will be ready for active operations by the time the new machinery is in place, when things will hum around Nogal, in Lincoln county.

Last week a big mining deal was closed at Pinos Altos, through which a party of San Francisco capitalists came into possession of the Bell & Stephens mining property at that place. Full particulars could not be obtained, but it is understood that the price paid was \$160,000, including the mills, water rights, etc.

Hillsboro Mines and Mills.

Active work on the Wicks mine was resumed this week and the mining force will be increased gradually from now on.

At the Snake all the leasers are reported as doing unusually well and frequent shipments of high grade ore are made.

Fifteen miners are at work on the Richmond. A carload of first class ore was shipped early this week and the Bonanza mill will start in a few days on a big run of milling ore from the mine.

The Rex lead carbonate strike, as work progresses, shows no diminishment in size, or value. Much work must be done to prove its extent and permanency, but it is certainly at present a very high prospect.

Scott and Wayland are working the seven-forty, an extension south of the Butler, and are getting ore that assays 15 per cent copper, three to four ounces gold and fifteen ounces silver to the ton.

Output of Hillsboro gold mines for the week ending Thursday, April 22, 1897, as reported for *The Advocate*:

	Tons
Wicks	10
Butler	10
Richmond.....	15
Happy Jack.....	10
Snake Group.....	15
Opportunity.....	10
Sherman.....	5
Prosper	5
Eighty five	5
Percha (silver-lead).....	5
Total	90

Total output since Jan. 1, 1897,—2,610.

Silver City.

W. H. Newcomb is shipping two cars of iron ore daily, from Legal Tender hill, almost within the city limits, to Pueblo, Colorado.

It is reliably reported that Dr. W. H. White and Hank Dorsey have made a rich strike of gold ore, on the east side of the Pinaro river, in the Greenlee district near the Arizona and New Mexico boundary line. They have four good claims from which they are taking out ore for shipment.

The Silver City Reduction works is extending its business by the purchase of ores throughout the southwestern territories and Old Mexico and is becoming a strong competitor of the great smelting companies of Colorado and El Paso. The miners are highly pleased with the business methods of the Silver City Reduction works.

The Brush Heap mine is said to be shipping a carload of ore a week of average value of

about \$2,000 per car. Some others of the Kingston district mines are expected to start very soon.

T. Scanlon has bought out the Titus interest in the Butler lease and the firm will now be Spencer, Collard and Scanlon. Work on the mine is showing up a large body of ore and it looks as though this lease will be the making of the Butler mine as well as being a very profitable one to the operators.

Franklin is the name of a new town situated on the property of the Franklin mining and milling company from which company it takes its name. It is about five miles above Red River City. The Franklin company claims to have spent in two years, over \$20,000 in improvements on its placer property, now having in place 600 feet of four-foot sluice boxes.

The Independence mine, in the Red River region, owned by a company of Las Vegas speculators, has been operated a year and a quarter. A good deal of tunnelling has been done and \$11 worth of ore has been taken out. The Goldbug, belonging to the same company, has shown up \$18 and the Last Chance, probably the best of their entire group of twenty-one claims, has shown ore which assays \$27. A tunnel of more than 110 feet has been driven.

UTAH

W. F. Snyder has purchased the interests of W. L. Raht, E. R. Smith and Walter James in the Head Center claim for himself and his partner, A. J. Moore, paying \$1000 for the same.

The Head Center is located within 3,000 feet from the Sevier mine, in the Gold Mountain district, in Piute county, and is valuable for its quartz ledges, as well as for its auriferous placer deposits.

The property has been surveyed and advertised for patents under the name of the Holland mining lode, and the purchase of these conflicting interests was made in order that a patent might issue without a protest being made.

It is now the intention of Messrs. Snyder and More to install a giant hydraulic on the ground and they hope to begin sluicing about the 10th of May, as the plant has already been ordered and the ditch is about completed, and unless their plans miscarry they hope to be able to send in their first consignment of bullion about the first of June.

The Holland carries excellent values in its placer deposits, and there seems to be no doubt but that it will develop into a heavy producer of the yellow metal, besides which the quartz ledges are well defined and are loaded with gold.

Mr. Snyder is one of the pioneers of Gold Mountain district and is doing a great deal towards its development, and he states that he is satisfied that it will come to the front at no distant day as one of the greatest gold camps in the west.

The Dexter company received another consignment of gold bullion from the Dexter mine April 20th valued at \$3,500. A letter was also received by the company stating that the property was looking well and that the ore bodies were improving with development. So far this month the Dexter mill has been turning out about \$1,500 daily in gold bullion and it is expected that as soon as the cyanide plant is in operation again, that the output will be materially increased.

Some very successful tests have been made of late with the Ellis concentrator, a new invention in this direction that is owned by a Salt Lake company. On the first of last week a test was made on second class Silver King and Anchor sulphide ores, and it was found that the machine handled this class of mineral to perfection, and especially the Anchor product, from which the zinc was separated and conveyed into the tailings pit while the silver and lead values came out in the shape of nice, clean concentrates.

There promises to be some trouble relative to the Crown Point group near the town of Manning, in Camp Floyd district, as this property is now believed to be quite valuable. The Crown Point was relocated soon after the first of the year by Messrs. Clay & Dieter, who claim that it was open for location, in as much as the assessment work had not been performed upon it for more than two years. It seems, however, that the former owners of the ground allege that it was not subject to location.

Sam Pollock, who is engaged in driving the tunnel on the Hercules group on Lion Hill, in Tooele county, was in Salt Lake City April 7th on business. Mr. Pollock states that the tunnel is now in a distance of 150 feet and that the formation in the face is porphyry, iron and quartz, and that the indications are that mineral will be encountered at any time now. Mr. Pollock reports that work is being pushed in the development of various properties on the hill, and that there will be a great deal of activity in that locality this season.

Hon. Thomas G. Merrill is feeling in excellent spirits over the showing in the properties in Ophir, Camp Floyd and Tintic districts, which are being developed under his direction. In the foothills north of Ophir canyon work is being pushed in the prospecting of the California group, in which encouraging values are already being uncovered, while on the Vanderbilt, on the west dip, the grade of the ore is constantly increasing. In Tintic district Mr. Merrill is doing effective work in the opening of the Justice and Gracie claims, adjoining the Triumph. He will soon let a contract for 300 feet of work on the Gracie, and he is confident that with depth he will encounter large bodies of high grade ore.

Work will soon be resumed in the development of the Gold belt properties, which are located on the west dip, in the Camp Floyd district. The Gold Belt group, with recent additions, in the shape of valuable claims adjoining, is now in excellent hands, as the central of the stock of the company is now vested in Messrs. Twomey & Twomey, Judge Burse, Miller, Dignowity and Genter. The company is capitalized at 400,000 shares of a par value of \$1 each, 60,000 shares of which have been set aside as treasury stock, and it is stated that already a large block of the treasury stock is being placed with eastern capitalists. The Gold Belt is favorably located in the near vicinity of the Omaha and La Cigale mines, and it is believed that with intelligent work it will open out into one of the big producers of the camp.

The Swansea mining company has contracted its output for the balance of the year, 1897, to T. R. Jones & Co., Salt Lake City, and shipments will begin at once. The mine is in splendid condition, with large reserves of mineral in sight and the company has a thousand tons or more of shipping ore in the bins at the mine. The South Swansea min-

ing company will have contracted its ores April 9th for the balance of the year. The South Swansea has 25 earloads of ore on the road to the samplers and broken down in the mine, besides which the property is in excellent shape, with enough mineral disclosed to maintain shipments for an indefinite period. Both the Swansea and the South Swansea are guilt-edged properties, and now it is an almost assured fact that they will make splendid records this season.—*Salt Lake Herald.*

Silver City Notes.

A contract has been let by the Alma mining company for sinking the Primrose shaft fifty feet deeper. A. C. Hose has the contract and will commence work in a few days.

A new strike of ore is reported last week on the north drift of the Homestake and President McGhan says that it has the appearance is being both a large and rich ore body.

The Silver Cloud mining company have advertised for bids for 100 feet of drifting from the bottom of their shaft and also for 100 feet of sinking. The shaft is now 192 feet deep.

The Star Consolidated is said to be looking in first class shape and the shipments from that property are heavier than usual. It is stated that arrangements for working the low grade ore from this property will shortly be made with the lessees of the Sioux mill.

The large body of ore in the south drift on 350 level of the South Swansea is said to be richer than at first supposed. Three samples taken from the drift show the following: 35 per cent lead and 157.4 ounces silver, 44.5 per cent lead and 90.6 ounces silver, 73.7 per cent lead and 110.4 ounces silver.

A. E. Crager, of Salt Lake, will receive bids for sinking the shaft of the Nellie Harris 100 feet at once and as soon as the work is done he will continue sinking toward the 200 feet level.

A fine body of ore was struck in the Morning Glory last week. The ore is about 18 inches wide. Two samples taken show 42 ounces silver and 8.5 per cent copper, and 16 ounces silver and 18 per cent copper respectively. The ore was found on the 265 foot level about 65 feet from the shaft. The Morning Glory has 2,000 feet of the vein between its present working and the Homestake and will drift in that direction along the vein about 200 feet deeper than the present workings of the Homestake.

GENERAL NEWS.

Recent Mining Patents.

Townsend Bros., Solicitors of Patents, 9 Downey Block, Los Angeles, California, report the following list of recent patents of interest to mining men:

No. 580,683. April 13, 1897. Recovery of Gold and Silver from their solutions. C. W. H. Gopner and H. L. Diehl, Hamburg, Germany. The process consists in adding to gold and silver cyanide solutions, cuprous cyanide, and then adding an acid.

No. 580,803. April 13, 1897. Pulp and Ore Sampler. F. M. Roseberg, Helena, Montana. A sampler cup is secured to an arm which is loosely fitted upon a shaft. The cup is operated by a bracket which carries it at regular intervals beneath the ore chute.

No. 581,106. April 20, 1897. Apparatus for Amalgamating and Concentrating Precious Metals. H. H. Eames, Boston, Mass. As-

signor to the Nova Manufacturing Company, Portland, Maine. A suitable receptacle having a partly cylindrical receiver and amalgamating plates leading upwardly from the bottom of the receiver, is provided with a drum which revolves in the receiver and is provided with a plate which intermittently forces the mass of material in a wave-like motion up on to the inclined amalgamating plates, the material flowing back to the receiver by the force of gravity.

No. 580,948. April 20, 1897. Process of Treating Cyanide Solutions. J. C. Montgomerie, Dalmore, Stair, Scotland. The solution is filtered through a charcoal filter, and the filter is renewed by heating the filtered material and condensing the resultant gases, after which the regenerated charcoal is again used as a filter; after repeated uses the filter material is treated to recover from the charcoal the precious metals accumulated therein.

Patents No. 581,032, to No. 581,037, inclusive, April 20, 1897, to Charles F. Pike, Philadelphia, Pa. No. 581,032 to No. 581,034, are for Process and Apparatus for separating Precious Metals from Magnetic Ores. The apparatus comprises a bed of mercury an electro magnet above the body of mercury an electro magnet below the body of mercury and electric circuits in which the magnets are set, so that the under magnet will operate to draw the magnetic ore downward into the mercury, then release it and allow the upper magnet to lift it from the mercury, after which the magnetic material is removed from the upper magnet. The process consists of the manner of operating the machine. No. 581,035 to No. 581,037 inclusive are for Apparatus for treating placer dirt. A traveling belt or grizzly passes through a shallow sluiceway in a direction opposite the flow of water therethrough. The devices are intended to operate with a small amount of water.

No. 580,099. April 20, 1897. A Machine for Pulverizing ores and other substances. J. J. Storer, N. Y., Frank Martin, Townsend, Montana and Geo. O. Eaton, N. Y. A horizontally fixed cylinder is interiorly divided by annular diaphragms into two or more communicating pulverizing chambers increasing in diameter from the feed end towards the discharge end of the cylinder; an exhaust fan exhausts the pulverizing material from the pulverizing chambers through centrally arranged openings in the diaphragms.

No. 581,160. April 20, 1897. Process of treating Ores Containing Gold and Silver. H. Hirsching, Salt Lake City, Utah. The ores containing copper are subjected, in the presence of moisture, to the action of ammonia and a nitrate. The resultant solution is decomposed and the metal or metals and ammonia separately recovered therefrom.

No. 581,159. April 20, 1897. Amalgamators. J. A. Hedge, Los Angeles, California. A rotatable amalgamating cylinder is arranged within a case having a curved amalgamating plate in its bottom. The cylinder rotates toward the back of the machine, and the ore and pulp is delivered upon the cylinder as it emerges thoroughly cleansed, from the water within the receptacle. The cylinder is provided with removable wings formed of amalgamating material.

Copies of these patents will be furnished by Townsend Bros. for ten cents each, or may be obtained for five cents each by addressing the Commissioner of Patents, Washington, D. C.

The Russian gold reserve in the Treasury and State banks, according an official statement March 28th, was 808,500,000 roubles.



AN ENGINEER OF THE PELTON WATER WHEEL COMPANY AND HIS CORPS OF ASSISTANTS MAKING A SURVEY FOR AN ELECTRIC POWER STATION IN THE MALAY PENINSULA

Pelton Water Wheels in India.

The Pelton Water Wheel Company of San Francisco and New York is one of the comparatively few houses in this country that appreciate the value of a foreign market for their product.

One of the most effective means of reaching this trade has been that of keeping a corps of well trained engineers in the field, making surveys and installing work in any part of the world where such service is required.

The illustration herewith shows one of these with native assistants making a survey for an electric power plant in far away India.

The firm above named furnished not long ago an extensive equipment for working the Ruby Mines in India, and more recently shipped several power plants to various points in the East Indies, designed for running the machinery of tea and coffee plantations which abound in that locality.

Water is available for power to an almost unlimited extent in those tropical countries and it only needs intelligent engineering to make it subservient to their use by all modern and economic methods.

The Placer Gold Fields of Colombia, South America.

A Los Angeles Lawyer Interested.

James G. Garrison and R. M. Straus left Los Angeles January 20th for New York, enroute for South America in quest of fortune. In 1892 Mr. J. D. Garrison of Henderson, Texas, a young civil engineer—a graduate of West Point of 1888—was commissioned to make a line of survey for the Inter-continental Railway, organized by the Pan-American Congress at Washington, under the auspices of Mr. Blaine's reciprocity movement—a protest against high protective tariff legislation. Mr. Garrison spent nearly two years in the execution of this important work. He set his initial stake in the suburbs of the city of Quito, and ran a line of survey from the Ecuadorian capital over the Cordilleros through the famous Canca valley to the ancient city of Carthage, on the Atlantic. Returning to Antioquia, he projected a line of survey down the Atrato River and the Isthmus of Panama to the line of Costa Rica. The skill and energy displayed in the execution of this work challenge the admiration of those who can appreciate the difficulties encountered. Strange

to say, the report of the survey has not yet been made to the U. S. Government.

While engaged in this work, Mr. Garrison had opportunities to investigate rich placer mines on the bars of the rivers, which were then being worked profitably by the natives. He called the attention of his kinsman—Jas. G. Garrison, of Los Angeles—to this fact. He began to investigate the matter, and was soon convinced of the marvelous richness of the mines. At his instance, Mr. J. D. Garrison returned to Colombia for the purpose of making a more careful investigation of the properties. He returned to New York on the 16th of December, and submitted to his cousin an exhaustive report on the mines, accompanied with maps, surveys and specimens of the gold taken out by himself. Mr. James G. Garrison came to San Francisco a short time ago, and presented the matter of buying and operating these mines to the Prince of Miners—Mr. Charles D. Lane. As a result of their conference, Jas. G. Garrison and R. M. Straus, the representatives of Mr. Lane, started promptly for Colombia. They sailed on an Atlas line steamer from New York on the 30th of January. They have infinite confidence in the success of their mission.

Miners' Convention.

The National Mining Bureau has issued a call for an "international gold miners convention" to be held in Denver on the 15th and 16th of June. The exhibits will consist of refined gold and gold ores and a general mineral display.

State bureau of mines, State schools of mines, Chambers of Commerce, Boards of Trade, Mining Exchanges and mining and miner's organizations are to co-operate in the exhibit and movement. The milling and smelting interests are requested to participate, as well as machinery manufacturers and dealers. Each county in the mining States is asked to hold a mass convention not later than May 20th and elect delegates to the gathering here.

Governor Adams was named as President of the convention and Irwin Mahon as Secretary, and the delegates from each State are requested to elect a Vice-President. Louis R. Ehrlich is to represent Colorado in that capacity.

"The Jeffrey Manufacturing Company of Columbus, Ohio is out with its 1897 catalogue descriptive of chains and labor saving devices. This catalogue is gotten up in handsome style and is one of the most complete of its kind published. The first part is devoted to illustrations of labor saving appliances as applied to various industries, while the balance of the book is devoted to the illustrating of its various chains, sprocket wheels, cable conveyor fixtures, and general mill and factory supplies. It is a valuable reference book and its price lists are such as will be of interest to all using labor saving appliances. Copies can be had by addressing above Company at Columbus, New York Philadelphia, Buffalo, Chicago, St. Louis, and Denver.

In the beginning of June work will be commenced on the 1000 horse-power electric plant for the Rawhide Company, which will be located either on the Stanislaus or Tuolumne river. The force generated will also be used in operating the machinery about the App mines.

The Miners' union of Silver City, Idaho, are taking steps toward the purchase or erection of a building for hospital purposes for that order.

Unsolicited Testimonial from a Practical Mining Man, Using Weber Gasoline Hoisting Engine.

SAN PEDRO, N. M., March 15, '97.
Weber Gas and Gasoline Engine Co.

GENTLEMEN. The 10 H. P. Self-Connected Gasoline Hoister, which I purchased from you some time ago, is all that you represented it to be, and the longer we use it the better we like it. I think you will sell two more engines exactly like this in this camp in a short time. The engine is thoroughly reliable and economical, and I strongly recommend it.

Yours truly, J. T. McLAUGHLIN.

The total capital stock of thirteen mining companies formed in British Columbia last week was \$10,300,000.

The Anglo-Mexican Company of Mexico reports for February an output of \$41,960.

The Comstock, Nev., paid \$60,415.16 to employees in March, 1897, \$2,000 larger than in February.

Platinum has been discovered by John S. Watkins, in one of his mines in the Cooper Hill district, near Laramie, Wyo. An assay made by the State University at Laramie gave returns of \$20,000 per ton, including gold, platinum and copper.

PERSONAL—NEWS ITEMS

R. C. Hatton returned to Las Cruces, N. M., from Chihuahua, Mexico, April 20th. Mr. Hatton went to Chihuahua on important mining business.

W. H. McCaw, Forest Ranger from Camp Gleason, Friday, April 23d, after burro. Mr. McCaw engaged in packing water on burros from the Gila river to the new camp.

D. B. Bigelow, representing the Union Iron Works at San Francisco, was among the callers at the Journal office last week.

C. B. Conway, agent of the Silver City smelter, was in Hillsboro, N. M., last week buying ore.

Geo. M. Jackson, superintendent of the Pinto Creek Mining and Smelting Co., near Phoenix, Arizona, left for St. Joseph, Mo., April 21, on a business trip.

Jonathan Begg, who locates mineral and patrol-eum by his new process, was at the JOURNAL office, April 29th.

Jerry M Ramsdale of White Oaks, N. M., has gone to Nogal and will accept a position in the "Hel-en-Rae" mill.

H. B. Watson of Randsburg, Cal., has just come in and gave the JOURNAL a pleasant call. Mr. Watson reports the mines of Randsburg prospering.

Hon. W. S. Hopewell of Hillsboro, N. M., was in Albuquerque the middle of last month.

W. T. Taylor, a representative of the El Paso Smelter, was in Congress Arizona, the last of April.

T. G. Condon, a prominent mining man, formerly of Colorado Springs, Colo., now of New York city, was in Hanover, Grant county, N. M., last week, looking after some valuable properties in which he is interested.

Joseph Pratt of Phoenix, Ariz., went to Big Bug, Arizona, the other day to settle up his mining interests before going to Perth Amboy, N. J., where he will enter into business with his brother William.

W. C. Rice of the Panamint country, was one of the callers at the JOURNAL office last week.

Jesse Grant, who has been in Albuquerque, N. M., for some time, has gone to New York to attend the ceremonies incident to the unveiling of the statue of General Grant.

Dr. C. J. Barnes, general manager and secretary, and J. C. Smith, superintendent of the Empire Smelting and Mining Co., of Crittenden, Ariz., were in Tucson last week on business.

J. M. Lucas, who has been an extensive operator in gold mines and mills at Golden, N. M., has left Albuquerque for Phoenix, Ariz., on a visit.

Steve Peck of St. Louis, Mo., was in Tombstone, Ariz., the 20th of April. Mr. Peck is one of the owners of the big copper properties twelve miles south of Casa Grande, Arizona, recently purchased by a party of St. Louis men.

Messrs. Knight & Kiel of Lake Valley, New Mexico, were at Cook's Peak the past week where they have a bond and lease upon some good property.

Prof. P. D. Barnhart has returned to Prescott from the San Francisco mountains. He says while the strike is a very rich one, it is not what it was reported to be.

President Mallette of the Wicks mine at Hillsboro, N. M., left for his home at Chicago April 22nd.

Marion Wigmore, of the firm of John Wigmore & Sons Co., heavy hardware merchants of this city, left April 30th for the west coast of Mexico on a business trip.

J. S. Tibbette, manager of the Du Quesne Mining and Milling Co., went east last week. He expects to be absent about sixty days.

Frank C. Barle, of the El Paso Smelting Works at El Paso, Texas, spent several days in Los Angeles, Cal., in the interests of his firm.

J. T. McLaughlin, the mining man of San Pedro, New Mexico, was a visitor at Albuquerque N. M., April 21st.

Dan Campbell of Globe, Ariz., arrived in Los Angeles last week. Mr. Campbell will remain here some time on account of poor health.

I. K. Thornton, vice president of the California Miners' Association, was in Sonoma, Toulumne county, Cal., last week, to organize, if possible, a branch of that organization in Toulumne county.

W. A. Hayt of Riverside, Cal., returned home the middle of April from a ten days' trip to his mines in the Panamint section.

Hon. Theodore Bushack left Salt Lake City the 19th ult. for Chubbonsville, Ida., on mining business.



Hereules Gas, Gasoline & Distillate Engines

Hoisting Engines 2 to 200 H.P. Stationery Engines 1 to 200 H.P. Marine Engines 2 to 200 H.P.

Our newly designed and perfected DISTILLATE VAPORIZER insures a saving of 50 per cent. on cost of running. Just 1/4 your expense saved by using a HERCULES in place of any other. We make no exceptions.

Nearly 3000 Hereules hoisting, Stationery and Marine Engines in Actual Use. High Grade.

We claim full power, automatic and positive adjustment regulating speed and consumption of fuel in proportion to work being performed. No spring electrodes to burn out. All springs are outside. Points of ignition, speed and amount of fuel can be changed while engine is in operation.

We make a Specialty of Mining Trade. Address **Hercules Gas Engine Works**

Write for Illustrated Catalogue

217 Bay Street, SAN FRANCISCO, CAL.

WEBER Gasoline Engine For use in any place or for any purpose requiring power. Only a few minutes' attention required each day. Guaranteed cost of operation is one cent per horse power per hour. The simplest, most economical and best power. Address **WEBER GAS AND GASOLINE ENGINE CO.**, 134 Southwest Boulevard, Kansas City, Mo.



MISSOURI DREDGE CO.,
KANSAS CITY, MO. Placer Mining Dredges a Specialty

TUTTHILL WATER WHEEL

The Latest and Best Wheel in the Market, BARRING NONE.

Wheels, Buckets and Nozzles designed to suit Special requirements, when Head and Conditions are Given. Theoretically as well as practically perfect. Highest Efficiency Guaranteed. Contracts taken for any size plant.



We have a Sensitive, Simple and Durable Governor, entirely new and novel, that will positively regulate speed of wheel. Specially adapted for electric railway and Lighting Plants.

OAKLAND IRON WORKS, BUILDERS, 108 First Street, San Francisco

Write for Catalogue

Telephone 1007 Main

Ores! Ores! Ores!!

Gold, Silver and Lead Ores and Concentrates

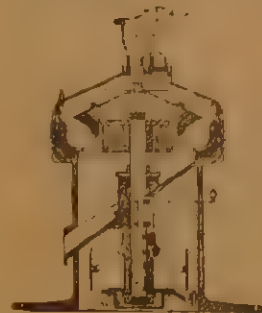
Purchased at Reduced Rates for Treatment.

Selby Smelting and Lead Co.

416 MONTGOMERY ST., San Francisco

Consign Shipments to Vallejo Junction, Cal.

MORRIS BALL PULVERIZER



MORRIS BALL PULVERIZER

IT POSSESSES GREATER CAPACITY THAN ANY MACHINE OF EQUAL WEIGHT. IT PULVERIZES HARD OR SOFT ORE EQUALLY WELL. IT MAKES NO DUST IN DRY PULVERIZING. IT REDUCES EITHER WET OR DRY EQUALLY WELL AND PULVERIZES TO ANY DEGREE OF FINENESS.



For further information Catalogues and Testimonials apply to

D. M. DOUB, General Agt., 137 First St. San Francisco.

Capt. Wm. Edwards, the mining engineer, returned to San Diego, Cal., from Ensenada, Lower California, Mexico, the middle of April.

William Lacy and son, Richard Lacy, of Los Angeles, Cal., were in Ensenada, Lower California, Mexico, last week in the interest of their mines on the gulf side of the peninsula.

Carlos M. Siqueiros, a prominent mining man from Ocampo, in the state of Chihuahua, was in the city of that name last week.

Guy Lombard, of the Agua Dulce, near Ensenada, Lower California, Mexico, returned to the mines from Los Angeles, Cal., April 14th.

J. L. Wells, a mineralogist of El Paso, Texas, has gone to Chihuahua, Mexico.

E. Van Cortlandt, who has been examining some properties at Jesus Maria for a New York company, spent two days in the city of Chihuahua week before last en route to Zacatecas.

J. D. McKenzie, the well known mill man, returned to Chihuahua from Santa Rosalia, Mex., April 17th.

Chas. L. Allen and A. R. Bryson came up from Ensenada, Lower California, Mexico, last week.

Messrs. A. F. Brown and A. F. Pollock, of the California Powder Works of San Francisco, was in Randsburg, Cal., last week.

W. S. Abbot, of Los Angeles, was in Acton the middle of April looking after some of his mining claims.

Frank D. Surley, of Chicago, Ill., who is interested in some mining property near Dos Cabazos, is examining the mines.

J. A. Bent, of the Sutter Creek Gold Mining Co., of Sutter Creek, Cal., was in Salt Lake City April 20th, enroute home from the east.

George Beck, of this city, is in Tuletown, Toulumuc Co., Cal., prospecting for a Los Angeles company.

Capt. Hank Smith, the superintendent of the Centennial-Bureka mine, recently returned to Salt Lake City from a trip to California.

E. J. Doherty and T. A. McArdle, of the Robinson Ferry mine in Toulumuc Co., Cal., was in San Francisco last week consummating the sale of the above mine.

W. Gresham and Morris Quinn, who have been with the Rio Grande Western railroad company at Salt Lake City for some time as bridge builders, have accepted a position with the White Rock Mining & Milling company of Elko, Nev., where they are assured of a steady position.

Dr. F. M. Endlich, the mining expert, has just returned from Arizona, where he went to examine a copper mine near Tucson.

Dr. G. A. Anderson and Mr. Forrest, of the Gold and Silver Extraction company of America Limited, left Salt Lake City for Denver April 23d.

J. C. Underwood, of San Diego, was in Acton, Cal., last week.

E. B. Coleman, of Salt Lake City, is in Elko Co., Nev., where he is engaged in the development of some gold properties.

J. K. Stump left Los Angeles the other day for Acton, Cal.

Horace Stayner will leave tonight for Lemhi Co., Ida., where he will resume work in the operation of the Prairie Basin placers on which a plant was erected last fall.

D. O. Langlin, the mining man of the City of Mexico, was in Chihuahua, Mexico, the middle part of April.

A. Wartenweiler, of Magistral in Chihuahua, Mexico, is on his way to San Francisco, Cal., where his home is located.

Anthony Godby, of Ensenada, was in Los Angeles the fore part of April.

Our old friend Arthur Hendy, the mining man of Jerome, Ariz., was in Prescott the middle of last month.

J. M. Bell and Mr. Beer, mining men of Monterey in Nuevo Leon, Mexico, paid Chihuahua a visit last week.

C. H. Blair, of Randsburg, Kern Co., Cal., is now in the Canyon del Oro, near Tucson, Ariz., where he is interested in some mining properties.

James J. West is on his way to Chicago, his home, from Jesus Maria, Chihuahua, Mexico, where he has been on a two months' visit at the mines.

Lacy Manufacturing Co.

Manufacturers of

Steel Water Pipe, Well Casing, Oil Tanks and General Sheet Iron Work, Irrigation Supplies, Steel Water Pipe for Hydraulic Purposes.

4 BAKER BLOCK,

LOS ANGELES, CAL.

OFFICE: 208-211 SAN—
PACIFIC SHEET METAL WORKS.
 MISSION ST. FRANCISCO, CAL.

MANUFACTURERS OF



• Air Pipe, • Concentrator Rolls, • Galvanized Tanks •

— SPIRAL LEADER PIPE —

And SHEET METAL WORK of every description

Largest and Best Equipped Factory in the West. Correspondence Solicited

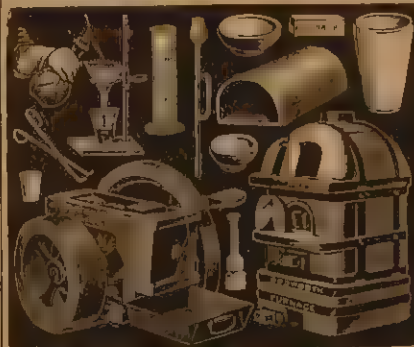
PROSPECTORS! Assaying and Determination of Minerals Simplified at



LUCKHARDT'S COMBINED ASSAY OFFICE

(Incorporated)

28 O'FARREL STREET, SAN FRANCISCO, CAL



FACTORY:

3101-3141 Blake St., 1742-1746 Champa St., Denver, Col

THE Denver Fire Clay Co

Assayers' and Chemists' Supplies

MANUFACTURERS OF

Crucibles, Scoriafiers & Muffles And all other kinds of

Fire Clay Material.

SPECIALTIES—Strictly c. p. Acids Test Lead, Bone Ash, Cyanide Potash, Argol, Borax, Borax Glass Iron Sulphides, Litharge, Soda, Mining Fluxes, etc.

Sole Agents for the **Ainsworth Balances** OFFICE:

VANDUZEN STEAM PUMP
 THE BEST IN THE WORLD.
 Pumps Any Kind of Liquid.
 Always in Order, never Ologs nor
 breaks. Every Pump Guaranteed.
 10 SIZES.
 200 to 12000 Gallons per Hour.
 Cost \$7 to \$75 each. Address
 Jas. Linforth, 87 Market St.,
 SAN FRANCISCO, CAL.

B. T. LLOYD

GOLD MINES.

Stocks and Bonds
 BOUGHT AND SOLD

McCormick Building, Salt Lake City, Utah

B. M. CALKINS

'PHONE "BLACK" 891.

J. J. LONERGAN

LONERGAN & CALKINS.

Gold AND Silver Refiners AND Assayers

MINING EXPERTS AND PROMOTERS

Miner's Gold and Silver Bought

Also Old Gold and Silver

Agents for S. S. LIGHTFOOT SYNDICATE

Cable Address "LonerGAN, Los Angeles"

London, England.

127 W. FIRST ST. LOS ANGELES, CAL.

Assayers and Chemists

WADE & WADE

Best and Oldest Establishment in Southern Cal.

115 1/2 N. Main St., Los Angeles, Cal.

AUSTIN BROS.

IRON, STEEL, MACHINISTS
 AND BLACKSMITH SUPPLIES

Iron Pipe, Oil Cans, Lubricators, Belding, Packing,
 Lacing, Asbestos Covering, Steam and Water Gauges,
 Shovels and Picks, Fairbanks Scales, Brass and
 Iron Steam Fittings, Etc., Etc.

Stockton, Cal.

THE CHRYSOMETER.

A CHEMICAL ASSAY OUTFIT. Anyone can use it. Chemicals enough for 100 assays with each \$25 outfit. J. W. PETTEE, Sole Manufacturer, 907 17th Street, Denver, Colo.

Cobb & Hesselmeyer,

MECHANICAL ENGINEERS

Hydraulics, Power, Tests, etc.

421 Market Street, Rooms 70 and 71
 SAN FRANCISCO, CAL.

An Assay

Will show what is in your ore.....

A Mill Test

Will show what you can get out of it

We Do Both

Practical working tests made of ALL CLASSES OF ORES and advice given as to best methods of extracting values. Mines examined and reported on. Twenty years experience with Pacific Coast ores.

F. M. Johnson & Co.

23 Stevenson Street,

SAN FRANCISCO, CAL.

LOS ANGELES SEWER PIPE ASSOC'N.

MANUFACTURERS OF

Fire Brick, All Fire Clay Products, Milled Fire Clay, etc.

For Fire Boxes, Lime Kilns, Furnaces and Smelters.

Also Dealers in English Fire Brick

Special Facilities for Supplying Assayers and the Trade of the Southwest.

649 and 651 S. BROADWAY,

LOS ANGELES, CAL.

PATENTS!

TOWNSEND BROTHERS
SOLICITORS
OF PATENTSPatents on Inventions secured in all countries. Copyrights, Trade Marks and Labels.
Office, 9, Downey Block.

Telephone 347. Los Angeles, Cal

GOLD

—AT—

CRIPPLE CREEK.

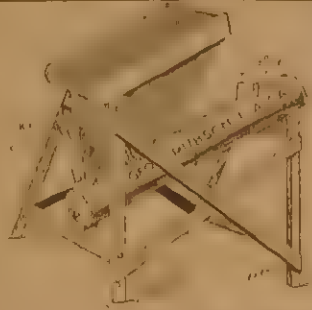
The heart of the Mining District is reached by the Midland Terminal Railway, which is the direct connection of the

Atlantic and Pacific Railroad
Southern California Railway

Through Palace Sleeping Cars and Through Tourist Sleeping Cars run every day from both San Francisco and Los Angeles to La Junta, Colorado, where immediate connection is made for the

GOLD DISTRICT

Through Tickets and Sleeping Car Reservations can be obtained at the Ticket Office of the Santa Fe Route

644 Market St., San Francisco
2d and Spring Sts., Los Angeles

The Little Water Gold Washer

For full particulars apply

219 Commercial St., LOS ANGELES, CAL.

Miners will find the ore tariffs on page 22 reliable. We have special arrangements with the different railroads to receive any changes as soon as made.

DENVER PUBLIC --- SAMPLING WORKS.

M. E. SMITH, PRESIDENT.

ORES SOLD ON THE PUBLIC MARKET. Denver, Colo.

Attention Mining Men!

J. MATT'S DRY GOLD SAVER

Manufactured and Exhibited at

625 Howard Street, - - - San Francisco, Cal.

FINE Gold Saver is easily as cheap as the SPARKS. NO WATER required for cleaning up. We save 98 per cent. Come and witness it, set on dry ground. Capacity of Standard Machines to Tons. Weight 10 lbs. Price \$300. First Class Material Used Throughout. Capacity of Small Machine 3 Tons. Weight 30 pounds. Price \$500. Machines are easily Taken Apart to be packed or carried anywhere. We build Machines to any size - power or hand. Orders promptly attended to. Call or write for Circulars

F. GOTTFRIED, General Manager and Manufacturer,
625 Howard Street, San Francisco, Cal.

G. C. FOWLER,

650-58 HOWARD STREET, SAN FRANCISCO.

W. T. SMITH

JAMES IRVING

W. T. SMITH & CO. Gold Refiners and Assayers.

Bullion to any value bought and Cash paid for the same day it is received.
We guarantee two (2) assays on every sample left with us.

Our Mr. Smith owned and operated Smelting, Refining and Chemical works in Providence, R. I., for over 20 years.

128 N. Main Street

Los Angeles, Cal.

Cheap Power!



Save Money by Using

"DANIEL BEST" Crude Oil Engine

This Engine can be operated on either Crude Oil, Distillate, Gasoline, or Kerosene. IT IS THE CHEAPEST POWER ON EARTH and is not tied to any one kind of oil, but can use any kind that will make gas and is not handicapped by being compelled to use a certain oil. Do not forget this when in need of an Engine.

We guarantee our Engines to work perfectly on California Crude Oil, or Distillate, or any other kind of gaseous oil, we however prefer CALIFORNIA CRUDE OIL, from Coalinga, Fresno county, for the reason that gas from Crude Oil will produce more power from the number of feet of gas used than from any other oil and it is also a natural lubricant as well, the valves being always lubricated sufficiently to prevent them from sticking, thus assuring greater durability of the working parts than it otherwise would be in using dry gas. And another advantage we claim is, that danger from explosions is reduced to a minimum, there being no accumulation of gas but is used by the Engine as fast as it is generated and hence is absolutely safe. The following is a test that we made with one of our Five-Horse-Power Crude Oil Engines running ten hours on the different gas oils:

Cal. Crude Oil, 40 grav. 7 1/2 gals. at 5c. \$ 87 1/2
Distillate, 40 " 7 1/2 " 8c. 80
Dom. coal Oil 40 " 7 1/2 " 12 1/2c. 89 1/2
Gasoline 7 1/2 " 8c. 1k. 1 1/2
City Gas, " " " " 2 00

We manufacture all sizes from two-horse power up, and will guarantee that our Engines will run cheaper and are more simple in construction, have fewer parts and hence are more durable than any other Gas Engines on the market. Seeing is believing, don't take our word for it, but come and investigate for yourselves. You can always see one in operation at our works. We will be pleased to see you and will at all times take pleasure in showing them up. Our Engines are specially adapted for running well and mining machinery—in fact for any kind of power desired, we are the pioneers and first inventors of Crude Oil and Distillate Engines. WE ALWAYS LEAD AND NEVER FOLLOW. Send for Catalogue and Price List of the only genuine Crude Oil and Distillate Engine made.

The Best Manufacturing Co.
San Leandro, Cal.

METAL MARKET.

New York Quotations:

	SILVER	COPPER	LEAD
April	85	11 1/2	11 1/2
" 17	85	11 1/2	11 1/2
" 19	85	11 1/2	11 1/2
" 20	85	11 1/2	11 1/2
" 21	85	11 1/2	11 1/2
" 22	85	11 1/2	11 1/2
" 23	85	11 1/2	11 1/2
" 24	85	11 1/2	11 1/2
" 25	85	11 1/2	11 1/2
" 26	85	11 1/2	11 1/2
" 27	85	11 1/2	11 1/2
" 28	85	11 1/2	11 1/2
" 29	85	11 1/2	11 1/2
" 30	85	11 1/2	11 1/2

MINING STOCK QUOTATIONS

BOSTON

A Jones	50	Franklin	11 00
Atlantic	10 00	Kearney	10 00
Boston & Mont	12 00	Quincy	112 50
Butte & Boston	18 50	Tamarack	125 50
Cal & Helca	370 00	Wolverine	10 50
Centennial	8 00		

COLORADO SPRINGS STOCKS

Antea	81	Inley	00 1/2
Alamo	00	Ironclad	00 1/2
Anaconda	40	Isabella	48 1/2
Argentum Indata	25	Isabella Stamp	00 1/2
Bangkok-Corn Belle	02	Jack Pot	00 1/2
Banks	8	Jefferson	00 1/2
Ben Hur	05	Keston	00 1/2
B. & N.	03	Monarch	00 1/2
C. & Manitow	00	Mollie Gibson	00 1/2
Credie & C.	00	Mount Rosa	00 1/2
Crowne	01	Orinole	00 1/2
C. C. Consolidated	11	Orinole	00 1/2
Des Moines	03	Orphan Bell	11 1/2
Elmer Rawlins	07	Pharmacist	12 1/2
Everette	10	Portland	00 1/2
Franklin	01	Peoples	00 1/2
Garfield Group	07	Sacramento	00 1/2
Golden Eagle	00	Specimen	00 1/2
Golden Piece	20	Star of the West	00 1/2
Gold & Globe	10	Trachyte	00 1/2
Gold Standard	05	Union Gold	24
Humboldt	00	Virginia M.	00 1/2
Ingram	15	Work	00 1/2

DENVER STOCK REPORT

Actna	01	Elkton	1 40
Anaconda	00 1/2	Eureka	00 1/2
Argenta	00	Garfield Group	07 1/2
Arcadia	00 1/2	Golden Piece	20
Argenta	00	Goldsmith	00 1/2
Argenta	00	Gold Standard	05 1/2
Argenta	00	Insley	00 1/2
Argenta	00	Ironclad	00 1/2
Argenta	00	Isabella	00 1/2
Argenta	00	Jack Pot	00 1/2
Argenta	00	Jefferson	00 1/2
Argenta	00	Mollie Gibson	00 1/2
Argenta	00	New Zealand	00 1/2
Argenta	00	Peoples	00 1/2
Argenta	00	Pharmacist	00 1/2

HELENA, MONTANA

Am Den & M Co	85	Grants Mount	1 25
And Butte	2 25	Hops	1 50
Benton Group	10	Iron Mountain	40
Bi Metallic	1 75	Moulton	30
Combination	25	Potosi	00

NEW YORK

Crown Point	10	Sierra Nevada	35
Con. Cal. & Va.	1 80	Standard	1 75
Gould & Curry	30	Union Con	30
Hale & Norcross	30	Iron Silver	40
Homestake	80 50	Quicksilver	3 00
Mexican	20	Quicksilver pfd	17 05
Ontario	10 50	Bulwer	25
Yellow Jacket	25	Yellow Jacket	25
Plymouth	20	Deadwood	45

SAN FRANCISCO

Alta	85	Monro	10
Belcher	10	Nevada Queen	00
Best & Belcher	15	Potosi	00
Bodie Con	00	Potosi	00
Chollar	00	Savage	30
Con. Cal. & Va.	1 80	Sierra Nevada	35
Crown Point	10	Union Con	30
Hale & Norcross	30	U. S.	00
Mexican	20	Yellow Jacket	25
Gould & Curry	30	Bulwer	25

ST. LOUIS

American Nettle	25	Elizabeth	20
Granite Mt.	10	Hope	1 40
Adams	10	Small Hopes	00
Diamond	1 75		

SALT LAKE CITY

Ajax	70	Horn Silver	2 22
Albion	10	Lucky Hub	05
Am. Nat. G's	10 1/2	Lucky Hub	20
Anchor	1 20	Mammoth	0 05
Bogart	0 75	Mercur	7 05
Bull. Rock	0 00	Ontario	10 50
Cent. Eureka	02 50	Rover	0 75
Dalton	10	Silver King	10 50
Daly	5 50	Swan	0 05
Daly West	5 00	Swan	2 40
Four Aces	10	So Swans	1 00
Galea	1 10	Tetro	0 05
Leaver	1 45	Uta	0 07

MEXICO

Name of Company	Date	Price
Angelita	Guasajuato	\$ 500
Aguirre & Anexas	Zacatecas	37 1/2
Cerro Colorado	Chihuahua	10
Concepcion & Anexas	S. Luis Potosi	100
El Oro	Guasajuato	80
do pre		00
Los de Honda	Michoacan	00
do Free stock		30
Luz de Maravillas	Hidalgo	100
Real del Monte		1 00
Rosario & Anexas	Durango	50
do pre		00
San Rafael del Oro	Guasajuato	10
Sta. Gertr. & Anexas	Hidalgo	100
do Free stock		20
Sta. Maria de la Paz	S. Luis Potosi	100
Tlalancingo	Puebla	10
Touchebucan gold	Veracruz	100
Zona Min de Pozos	Guasajuato	10

Note—The above Mexican stocks are figured on the basis of Mexican silver

NEW IMPROVED McGlew Ore Concentrator

IN USE IN

California
Oregon
Washington
Nevada
Arizona Territory
Mexico
Central America
Australia



Patented
Sept.
1893

We guarantee these machines to handle an average of ten tons per 24 hours, and to do cleaner and closer work than any Other CONCENTRATOR in use.

Price, \$300 Net Cash, f. o. b.

Write for Descriptive and Testimonial Circulars

THE MCGLEW ORE CONCENTRATOR CO., 131 First Street, San Francisco, Cal.

FAIRBANKS Ore and Bullion Scales



Ore Cars, Steam Pumps, Fairbanks
Gas Engine.

SCALES OF ALL SIZES AND CAPACITIES

We make a Specialty of

Scales for Mines, Mills and Smelters.

Fairbanks, Morse & Co.

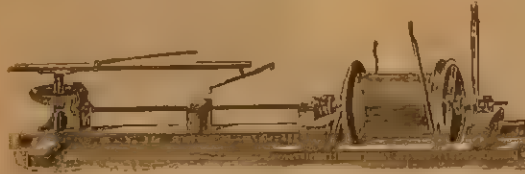
316 Market St., San Francisco, Cal.
210 North Los Angeles Street, Los Angeles, Cal.

Correspondence Solicited.

KROGH MANUFACTURING CO.

Successors to the San Francisco Tool Co.'s Mfg. Dept., builders of *Engines and Centrifugal Pumps* for Mining and Water Works. These pumps can be operated by horse power, water power, steam, gasoline or electric motors.

Horse Power!



Horse Power Mine Hoist.

also manufacture Cyanide Tanks and Centrifugal Sand Pumps for filling and discharging them. The Pumps work the tailings to perfection and are made to handle small or large quantities.

OFFICE AND WORKS

51 Beale St. and 9 to 17 Stevenson St. San Francisco, Cal.

J. P. TAGGART Mines and Mining

Properties reported on in all parts of the world.
Correspondence Solicited.

284 N. HILL STREET,

LOS ANGELES, CAL.

C. A. LUCKHARDT & CO.

Nevada Metallurgical Works.

71 AND 73 STEVENSON STREET, SAN FRANCISCO, CAL.

Assaying, Analyses, Sampling.

Reagent and Working Tests of Ores, Etc., Promptly

STAMP MILL AND CONCENTRATOR IN OPERATION ON PREMISES

N. OHLANDT & CO.

MANUFACTURERS OF

Best Quality of BONE ASH for Assayers.

Our Goods are used in all parts of the United States and Mexico.

EXTRA No. 1 and No. 2

CORRESPONDENCE SOLICITED

327 MARKET STREET, SAN FRANCISCO, CAL.

MINING PIPE



STEEL OR IRON.—We make pipe of either, but recommend STEEL, it being superior to iron in many particulars and inferior to none.

WRITE FOR CIRCULARS OF
THE TRUAX PATENT AUTOMATIC ORE CARS.

SCHAW, INGRAM, BATCHER & CO., Hardware Merchants
SACRAMENTO, CALIFORNIA.

The Harrington & King Perforating Co.

METALS PERFORATED AS REQUIRED

FOR MINING SCREENS OF ALL KINDS FOR USE IN

mining and Milling Machinery, Reduction and Concentrating Works

Stove Coal, Ore Screens Stamp Battery Screens

Standard Sizes Perforated Tin and Brass Always in Stock

MAIN OFFICE AND WORKS, 214-243 NORTH UNION ST., CHICAGO, ILL.

Dry Gold Washers

ADAPTED TO PLACER MINING

MANUFACTURED BY

F. F. COLLINS,

MANUFACTURING CO.
SAN ANTONIO TEXAS

Send for Catalogue of General Pumping
and Water Supplies.



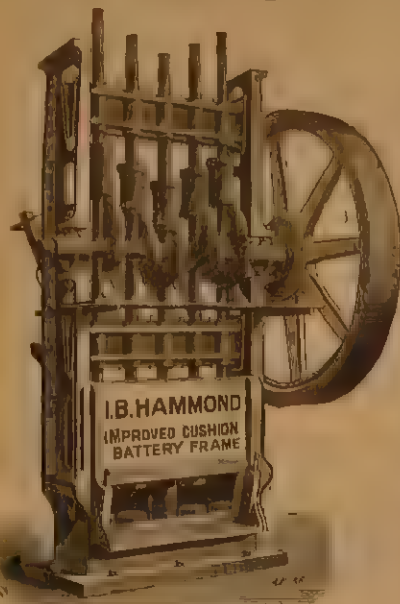
The Mining and Metallurgical Journal



Is the ONLY publication in the SOUTHWEST devoted to the Mining Industry and circulates in every MINING CAMP or place where there is a MINE, MILL or SMELTER in California, Mexico, Lower California, Arizona, New Mexico, Texas, Nevada, Utah and Colorado. It has a LARGER circulation in Southern California, Mexico, Lower California, Arizona, New Mexico and Texas than any other MINING JOURNAL published and is therefore the best advertising medium for those seeking business with the Mines Mills and Smelters.

HAMMOND MANUFACTURING CO.

MANUFACTURERS OF STAMP MILLS CONCENTRATORS And all Classes of MINING MACHINERY



We are prepared to furnish parties desiring small plants in localities where fuel is extremely expensive, with mills coupled up and ready to run with gasolene engines, guaranteeing the efficiency of both engine and mill.

Write us for Catalogues and Estimates

HAMMOND MANUFACTURING COMPANY

69 First Street,
PORTLAND, OR.

THE JOHANNESBURG SAMPLING WORKS

Purchasers of Gold, Silver, Copper and Lead Ores and Concentrates

Cash Returns Made Within Twenty-four hours after receipt of Ore.

CHAS. R. WORGES, Manager,

Johannesburg, Cal.

**SHEPARD, WHEELER &
RHODES**
Mining Engineers and U. S. Deputy
Mineral Surveyors.

Have a Complete and Accurate Map made from
Actual Surveys, showing all Mining Claims
in the Randsburg Mining District.

Price, \$10.00 Randsburg, Cal.

**RANDBURG
A. J. PETTER,**
MINING ENGINEER AND ASSAYER
Examiner and Dealer in Mines. Have
Several properties listed for sale. Cor-
respondence solicited with intending purchasers.

H. L. NELSON & CO.
Real Estate and Mining Broker
Abstract Bureau & Notary Public.
Correspondence Solicited,
RANDBURG AND JOHANNESBURG, CALIF.

Nolan & Smith
Mining Brokers
Capital furnished for Purchase of Mines
and Prospects
Also for Development of those that have merit.
Send description and Samples
228 W. SECOND ST., LOS ANGELES, CAL.

It Pays to Advertise in the Journal.

Los Angeles
Business College

212 WEST THIRD ST., LOS ANGELES, CAL.

Gives a thorough course in PRACTICAL ASSAYING and CHEMICAL ANALYSIS in connection with their other courses of study. For full information address them as given above.

JOHN P. CULVER, Civil Engineer.

FRANK H. JACKSON, Mining Engineer

JOHN P. CULVER & COMPANY,

ASSAYERS, MINERALOGISTS and MINING ENGINEERS,

145 South Broadway, - LOS ANGELES, CAL.

School of Practical, Civil, Mechanical,
Electrical and Mining Engineering.
Surveying, Architecture, Drawing and Assaying.
933 MARKET ST. SAN FRANCISCO, CAL.
OPEN ALL YEAR
A. VAN DEL NAILLEN, President
Assaying of Ores, \$25. Bullion and Chlorination
Assay, \$25. Blowpipe Assay \$20. Full Course
of Assaying, \$50. Established 1904
Send for Circular

BELTING Of all Descriptions,
FOR MILLS MINES AND SMELTERS

Specialties

DYNAMOS, WATER PROOF,
RAWHIDE AND SEWED
.....BELTING.

Fred R. Cook,

208 Mission Street, San Francisco, Cal.

E. L. BURLINGAME'S
ASSAY OFFICE
Chemical
Laboratory
Established in Colorado, 1866. Samples
by mail or express will receive prompt
and careful attention. Gold and Silver
Bullion refined, melted and assayed, or
purchased.
Address 1738 and 1739 Lawrence St., Denver, Col.

Union Iron Works

Manufacturers of and Dealers in

**Mining,
Milling,
AND
Smelting**

MACHINERY

Foundry and Machine Shops.

ALBERT THOMAS, Prop.

First and Alameda Sts. Los Angeles, Cal.

REPRESENT LEADING PROPERTIES

Surveys and examinations made and reports
furnished by the most competent experts.

CORRESPONDENCE SOLICITED

Information promptly furnished Address

J. O. O'Bannon,

DURANGO, MEXICO

J. K. EVELETH

V. H. M. MACLYMONT

EVELETH & MACLYMONT,

ASSAYERS

Assays and Analyses of Ores. Practical Mill-tests by 3-Stamp Mill and Concentrating Plant

10 Annie Street, San Francisco

(Opposite Palace Hotel)

Cable Address: Villamont, San Francisco

Telephone Main 738



AINSWORTH NO. 1

SENSIBILITY.....1-200 MILLIGRAMME

This is a short beam balance and is perfectly

adapted for smelters and assay offices where ex-

trême accuracy and rapidity are prerequisites.

Complete catalogue of Ainsworth and Ainsworth

supplies, including a full and complete balance, based

upon application. SKEELING AGENTS

The Denver Fire Clay Co.,

1742-1746 Champa St., Denver, Colo.

P. O. BOX 1540

AXELSON MACHINE COMPANY

HIGH GRADE MACHINE WORKS

SPECIAL TOOLS TO ORDER

Gear Cutting, Milling and Universal Grind-

ing, Jobbing and Repairing

1101-3-5 North Main Street, Los Angeles, Cal.

Advertise in the JOURNAL

VON SCHULZ & LOW

ASSAYERS CHEMISTS, and BL-
TION DEALERS

P. O. Drawer 1537 1746 Champa St DENVER, COLO

Prices for Specimen assays: Gold Silver Lead
or Copper, \$1.00 each any two for \$1.50 any three,
\$2.00. Complete pit e lat and sample bags for
milling furnished on application

W. W. MONTAGUE & CO.

MANUFACTURERS OF

Riveted Sheet Iron and Steel

WATER PIPE

For Hydraulic Mining Power Plants and Mills.

Iron Out, Punched and Formed for Making Pipe on the Ground Where Required to Save Freight.

GALVANIZED IRON

Air Pipe, Concentrator Rolls, Water Tanks

SAN FRANCISCO, CAL.

THE BI-METALLIC ASSAY OFFICE

AND CHEMICAL LABORATORY.

Assaying in all its branches. Determinations accurately made.

R. A. PEREZ, E. M., Mgr.,FORMERLY: Chief Assayer El Paso Smelting Works, El Paso, Tex.
Assistant Chemist Consolidated Kansas City Smelting and Refining Co., Argentine, Kansas.

(Prompt Returns.)

124 S. MAIN ST., LOS ANGELES CAL

\$32,915,000

Paid in Dividends by Utah Mining Stocks

Weekly Market Letter on Application
Quotations by Wire or Mail.**JAMES A. POLLOCK,** Mining Stock Broker,
SALT LAKE CITY, UTAH.**KENNETH DONNELLAN**
Stock & Mining BrokerWeekly Quotations furnished on request
Reference: Any Bank or Banker
in Salt Lake City, Utah**Quartz Screens**A specialty. Round, slot
or burr slot holes.
Genuine - Russia Iron,
Homogeneous Steel, Cast
Steel or American plan-
ished Iron, Zinc, Cop-
per or Brass Screens for all purposes. CALIFORNIA
PREPARING SCREEN CO., 146-147 Beale St., S.F.**UNION HARDWARE AND METAL CO.**

— DEALERS IN —

Boiler Tubes, Iron Pipe and Fittings

RAILROAD, MILLING, MINING and FOUNDRY SUPPLIES

214 and 216 N. Los Angeles Street

Los Angeles, Cal.

**THE WILSON**
Forged High Grade Steel
Shoes and DiesGuaranteed to Wear Longer and Prove Cheaper than any others.
Made by use of Special Appliances. Patented Aug. 16th, 1893.

— Made only by —

WESTERN FORGE AND ROLLING MILLS,
St. Louis, Missouri**JOSHUA HENDY MACHINE WORKS**

SOLE AGENTS

38 to 44 Fremont Street,

San Francisco, Cal.

**J. H. MASTERS,**

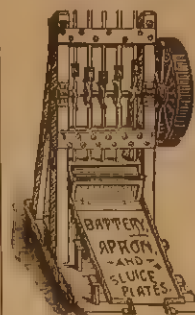
Manufacturer of and Dealer in

Ore Sacks, Tents & Camp

Furnishings

218 Commercial St.,
LOS ANGELES, CAL.**TANKS**OF EVERY DESCRIPTION
— FOR —**Mines, Mills and Cyanide Plants**
Patent Non-Shrinking Water TanksThe only Tank that will stand the Desert
and Hot Climate
Write for Catalogue and estimate on any kind
of Tank Work.**Pacific Tank Co.**

33 BEALE ST., SAN FRANCISCO

**To Gold Miners!****Silver Plated Copper AMALGAM PLATES**
For Saving Gold.**GOLD REMOVED FROM OLD PLATES AND REPLATED**
Old Plates Bought. Get our Reduced Rates. Thousands
of orders filled. Twenty-six Medals Awarded.

San Francisco

GOLD, SILVER and NICKLE Plating Works

653 and 655 Mission Street, San Francisco, Cal.

Telephone, Main 593.

E. G. DENNISTON,

Proprietor

Every description of work plated. Send for Circular.

FRUE ORE CONCENTRATOR

Over 4,200 in Actual Use

Manufactured under Patents of April 27, 1880; Sept. 18, 1883; July 24, 1883; and March 31, 1891



It can be safely stated, without going into a description of several new and untried concentrators that have lately come into the market, that where sulphurets are of such value as to make close saving necessary, the Frue Vanner is always used. It is the only endless belt concentrator in the market that can be relied on to handle all classes of ores, and give universal satisfaction. (In all competition of concentrators the Frue Vanner is taken as the standard machine of the world, and all comparisons made by it. There have been over 400 of these machines sold, 1700 having been sold on the Pacific Coast alone.) They are in use in every part of the world where mining is carried on, and in all cases they are giving perfect satisfaction. From time to time valuable and important improvements have been made in this machine to increase its capacity and durability, and particular attention is called to the Patent Lip Flange for the rubber belt, which does away with nearly all the strain and cracking, as in the old style of flange, making the life of belt more than double that of other style belts in the market. The lip of flange bends outward in going over the large end rolls, thereby distributing the strain in the solid rubber, and bringing virtually no strain either at the edge or at the base of flange, as is the case in all belts with a raised edge.

Price of 4-foot wide Plain Belt Frue Vanner	\$500 f. o. b.
" 6-foot wide Plain Belt	600 f. o. b.

For any information, pamphlets, circulars or testimonials, call on or address

JAS. S. BROWNELL, Western Agent **FRUE VANNING MACHINE CO.**
Successor to ADAMS & CARTER
132 Market Street, San Francisco**F. M. ENDLICH,**
Lute Mineralogist Smithsonian Institution**GEO. F. HOYT,**
U. S. Deputy Mineral Surveyor**ENDLICH & HOYT.****Mining Engineers and Metallurgists**Mines and Processes examined and reported on. Specialties:—Treatment of
Low-grade Ores, Concentration, Cyanide Leaching, Designing, and
erection of suitable plants for refractory ores. Mines bought
and sold. Only properties that will stand closest in-
vestigation considered. Surveying and un-
pure Assays and Analyses.

Correspondence Solicited.

Office: 201 Bullard Block,

Los Angeles, Cal.

INCORPORATED MINES PAYING DIVIDENDS.

NAMES OF MINES	LOCATION	No. of Shares	Capital Stock	Par Value	Amount of last Dividend	Date of Last Dividend	Total Amount Paid in Dividends	Kind of Mineral Produced
Aetna Cons.	California	100,000	\$ 500,000	\$ 5	\$ 10	Dec. 1896	\$ 80,000	G
Adams	Colorado	150,000	1,500,000	5	0 04	October 1896	89,500	S, L, C
Alaska, Treadwell	Alaska	200,000	5,000,000	25	10	January, 1897	3,100,000	G
Alaska Mexican	Alaska	200,000	1,000,000	5	27 1/2	January, 1897	191,031	G
Anaconda	Montana	100,000	30,000,000	25	1 25	Nov. 1896	2,250,000	C
Anchorage Leland	Colorado	600,000	600,000	1	01	Jan. 1897	36,000	G
Atlantic	Michigan	40,000	1,000,000	25	1 00	Feb. 1897	740,000	C
Bald Butte	Montana	250,000	250,000	1	03	June 1896	47,100	S, G
Bangkok C. Bell	Colorado	600,000	600,000	1	1	July 1896	10,100	S, L, C
Big Six	Colorado	500,000	500,000	1	00 1/2	May 1896	2 00	G, S
Boston & Montana	Montana	150,000	3,750,000	25	3 00	Feb. 1897	7,100,000	G, C, S
Bullion Beck and Champ.	Utah	100,000	1,000,000	10	20	Jan. 1897	1,000,000	G, S
Caribon	British Col.	800,000	800,000	1	02	Dec. 1896	125,119	G, S
C. O. D.	Montana	500,000	500,000	1	01	March 1896	25,000	G
Calumet & Hecla	Michigan	100,000	2,500,000	25	15 00	Feb. 1897	14,500,000	C
Centennial Eureka	Utah	80,000	1,500,000	50	1 00	Jan. 1897	1,800,000	S, L
Champion	California	3,400	34,000	10	10	August 1896	218,000	S, G
Consolidated, California and Virginia	Nevada	216,000	21,000,000	100	25	March 1895	3,592,500	S, G
Copita	Nevada	100,000	10,000,000	100	01	Feb. 1895	77,000
Copper Queen Consolidated	Arizona	200,000	2,000,000	10	25	June 1895	1,910,000	C
Daly	Utah	150,000	3,000,000	20	25	August 1896	2,887,500	S, L
Deadwood Terra	Dakota	200,000	5,000,000	25	50	August 1896	1,240,000	G
De Lamar	Idaho	400,000	2,000,000	5	25	October 1896	2,250,100	S, L
Derbec B Gravel	California	100,000	10,000,000	100	05	March 1894	265,000	G
Dalton and Lark	Utah	2,500,000	2,500,000	1	00 1/2	August 1896	87,500	S, L
Elkhorn	Montana	200,000	1,000,000	5	08	June 1895	1,212,000	S
Elkton	Colorado	500,000	500,000	1	02	Jan. 1897	191,960	G, S
Enterprise	Colorado	500,000	2,500,000	5	25	June 1893	825,000	S
Florence	Montana	500,000	2,500,000	5	01	Jan. 1897	118,006	S
Franklin	Michigan	40,000	1,000,000	25	2 00	January 1894	1,240,000	C
Galena	Utah	100,000	1,000,000	10	05	Jan. 1897	71,000	G, S, L
Garfield Grouse	Colorado	1,200,000	1,200,000	1	01	Dec. 1896	24,000	G
Golden Eagle	Colorado	1,000,000	1,000,000	1	01	Sep. 1896	10,000	G
Golden Fleeca	Colorado	800,000	800,000	1	01	Dec. 1896	563,179	G, S
Gold Coin	Colorado	200,000	1,250,000	5	10	Feb. 1897	120,000	G, S
Gold and Globa	Colorado	750,000	750,000	1	3-10	August 1896	3,000	G
Granite Mountain	Montana	400,000	10,000,000	25	20	July 1892	12,120,000	S
Great Western	California	50,000	5,000,000	100	10	November 1893	88,000	G
Hecla Consolidated	Montana	30,000	1,500,000	50	50	January 1897	2,160,000	S, G, L, C
Helena & Frisco	Idaho	500,000	2,500,000	5	04	August 1896	475,000	S, L
Homestake	Dakota	125,000	12,500,000	100	25	Jan. 1897	8,119,750	G
Hope	Montana	100,000	1,000,000	10	10	February 1897	662,252	S
Horn Silver	Utah	400,000	10,000,000	25	12 1/2	January 1896	5,137,500	S, L
Iowa	Colorado	1,000,000	310,000	1	01	Dec. 1896	80,000	G
Iron Mountain	Montana	500,000	5,000,000	10	06	Nov. 1896	492,500	S
Isabella	Colorado	2,250,000	5,000,000	100	01	Sep. 1896	202,500	G
Kearsarge	Michigan	40,000	1,000,000	25	1 00	Dec. 1895	120,000	C
Kennedy	California	100,000	10,000,000	1	48	August 1895	1,796,000	G
Leadville Consolidated	Colorado	400,000	1,000,000	10	03	February 1893	318,000	S, L
Maid of Erin	Colorado	600,000	3,000,000	5	02	November 1895	710,000	S, L, G, C
Mayflower	California	80,000	1,200,000	20	10	December 1895	242,000	G
Minnesota	Minnesota	185,000	18,500,000	100	1 50	July 1896	3,240,000	L
Mollie Gibson	Colorado	1,000,000	5,000,000	5	05	January 1895	4,080,000	S
Montana Lt	Montana	600,000	3,000,000	5	06 1/2	October 1895	2,890,637	G, S
Moose	Colorado	600,000	3,000,000	1	01	January 1896	186,000	G
Morning Star	California	2,400	240,000	100	7 00	October 1895	446,400	G
Moulton	Montana	400,000	2,000,000	5	05	February 1894	460,000	S, G
Mercur	Utah	200,000	5,000,000	25	12 1/2	Jan. 1897	600,000	G
Mammoth	Utah	400,000	10,000,000	25	05	Nov. 1896	1,150,000	G, S, O
Moon Anchor Gold	Colorado	600,000	600,000	1	01	July 1896	24,000	G
New Elkhorn	Colorado	300,000	1,500,000	5	24	Sep. 1896	72,000	G
New York & Hon. Rosario	Central A.	150,000	1,500,000	10	10	Jan. 1897	800,000	S, G
Mt. Rosa	Colorado	1,000,000	1,000,000	1	00 1/2	Oct. 1896	30,000	G
Napa	California	100,000	700,000	7	10	January 1897	820,000	G
North Star	California	100,000	1,000,000	10	50	June 1893	450,000	G
Nugget	Colorado	1,000,000	1,000,000	1	00 1/2	Jan. 1895	10,000	G
Omaha Consolidated	California	24,000	2,400,000	100	15	July 1894	97,200	G
Ontario	Utah	150,000	15,000,000	100	10	January 1897	13,370,000	S, L
Osceola	Michigan	50,000	1,250,000	25	1 00	February 1897	2,122,500	C
Pacific Coast Borax	California	20,000	2,000,000	100	1 00	July 1893	422,500	B
Parrot	Montana	230,000	2,300,000	10	10	June 1894	1,622,000	C
Plumas Eureka	California	110,000	1,400,000	10	13	October 1893	2,696,295	G
Portland	Colorado	3,000,000	3,000,000	1	01	January 1897	893,000	G, S
Quicksilver Pref	California	43,000	4,300,000	100	25	June 1891	1,823,911	G
Quincy	Michigan	50,000	1,250,000	25	00	February 1897	9,070,000	C
Red Cloud	Idaho	200,000	1,000,000	5	10	December 1892	153,000	S, L
Rico Aspen	Colorado	1,000,000	5,000,000	5	02	November 1894	325,000	S
Sierra Buttes	California	222,300	2,223,000	10	12	October 1893	1,559,023	G
Silver, Mg	New Mexico	500,000	500,000	1	05	December 1891	300,000	S
Small Hopes Consolidated	Colorado	250,000	5,000,000	20	10	March 1896	3,270,000	G
Standard	California	100,000	10,000,000	100	10	June 1895	3,771,159	G, S
St. Joseph	Missouri	250,000	2,500,000	10	25	Dec. 1895	2,324,000	L
Silver King	Utah	150,000	3,000,000	20	25	Jan. 1897	90,000	S, L, G
Spruiggler Union	Colorado	50,000	5,000,000	100	1 00	October 1896	150,000	G, S
Tom Boy	Colorado	200,000	200,000	10	20	March 1896	410,000	G
Tamarack	Michigan	50,000	1,250,000	25	3 00	Dec. 1896	4,770,000	C
Trinity River	Colorado	500,000	500,000	1	April 1894	37,600	G
Union	Colorado	1,250,000	1,250,000	1	01	June 1896	73,000	S
United Verde	Arizona	300,000	3,000,000	10	25	December 1893	582,500	C
Utah	Utah	100,000	1,000,000	10	02	Nov. 1896	175,000	G, S
Victor	Colorado	200,000	1,000,000	5	10	Dec. 1896	705,000	G
War Eagle	B. C	500,000	500,000	1	06	October 1896	187,000	G
Yankee Girl	Colorado	200,000	1,300,000	5	25	July 1891	520,000	S

S, Silver.

G, Gold.

L, Lead.

C, Copper.

Q, Quicksilver.

I, Iron.

B, Borax.



W. T. GARRATT & CO. Brass & Machine Works.

MANUFACTURERS

HOOVER STEAM PUMPS,
MINERS' SINKING PUMPS,
TRIPLE PLUNGER PUMPS,
JACKHEAD MINING PUMPS,
CENTRIFUGAL PUMPS,
GONGS FOR MINE SIGNALS,
LUBRICATORS & OILERS,
SUCTION HOSE AND COUPLINGS,
HYDRAULIC PIPES,
IRON PIPE AND FITTINGS,
BARRETT METALS,
PACKINGS
REPAIRING PROMPTLY ATTENDED TO.

138 to 148 Fremont Street,
SAN FRANCISCO, CAL.



MINERS' OUTFITS.



IRON MORTARS,
AMALGAM MORTARS,
GOLD WASH PLAYS,
MINERS' HORNS,
RUPES CRIBBERS,
HORSE SHOE MAGNETS,
MAGNIFYING GLASSES,
IRON RETORTS,
CHEMICAL SCALES,
WEIGHTS, ETC.

Including a full as
sortment of Mine and
Mill Supplies. ASSAY
ers' Materials, ETC.



Sole Agents for the
Pacific Coast for the

W. S. TYLER WIRE WORKS CO.
Manufacturers of

Steel and Brass Wire Battery Screens
Agents for Baker & Adamson's Chemically
Pure Acids. A full Stock always
on hand.
Nitric Acid, sp. gr. 1.42; Muriatic Acid, sp. gr. 1.20; Sulphuric Acid, sp. gr. 1.845.

JOHN TAYLOR & CO.
63 FIRST ST., SAN FRANCISCO
Prices on application.

STATE ORE

Established
1880, **Sampling Works**

A general Ore Market. Largest Works in
Colorado. Modern Mills and Machinery
at Denver, Idaho Springs, and Black Hawk.
ORE SOLD ON COMPETITIVE BIDS.
Write for our reference book. Address
STATE ORE SAMPLING CO.,
Gold Bullion bought. Denver, Colorado

ANGELS IRON WORKS

DEMAREST & FULLEN, Props.

Mining Machinery.

ANGELS, CALIF.

Write for catalogue on complete Milling, Mining
and Reduction Plants.

WANTED—A well-developed copy
of a mining manual for treatment on royalty by the
cyanide or other process

F. C. GARBUTT

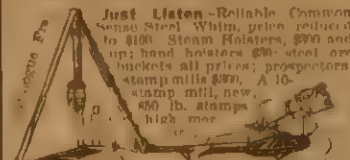
STIMSON BUILDING, LOS ANGELES, CAL.

THE CHEAPEST PLACE ON EARTH

TO OUTFIT A MINE IS AT

The J. H. MONTGOMERY MACHINERY CO.,

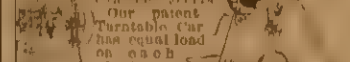
1220-22 Curtis St., Denver, Colo., U. S. A.



Just Listen—Rollable Common
sense steel wheels, price reduced
to \$100. Steam Hoisters, \$200 and
up; hand hoisters \$50. steel ore
buckets all prices; prospectors'
stamp mills \$300. A 10-
stamp mill, new,
\$500 lb. stamps
high more

Latest Improved, only \$200. Ores tested and
amalgamation and concentration mills built to
fit the ore and guarantee to save what we say.
Cool Mine equipments, Screens,
Jigs, Trampways, Crushers, Etc.
Rolls, 12x30, weight 4,000 lbs.
price \$200; Feeders, 12x30,
and Compressors, 12x30,
price \$200. Blake Crush
Tales, 12x30, price \$200.

Our patent
Turntable Car
has equal load
on each
wheel, wears
even, can be ap-
plied to any
machinery. One 100
page catalogue with
hundreds of useful tables.
FREE. Best Machinery and
least money for it.



Write for our reference book. Address
STATE ORE SAMPLING CO.,
Gold Bullion bought. Denver, Colorado

A. A. BAILEY

MANUFACTURER AND DEALER OF THE LEADING

Packings and Engineers Supplies

LUBRICATING OILS AND COMPOUNDS

Exclusive Manufacturer of the UNCRACKED

BAILEY

Anti-Friction Metal and all other Grades of Rabbitt Metal

Sole Agents for Reliable Steam Pumps

300 South Los Angeles Street,

Los Angeles, Cal.

P.&B. Manilla Roofing

Put up in Rolls 36 Inches Wide

250 SQUARE FEET WITH PAINT AND NAILS..... \$4.00
500 SQUARE FEET WITH PAINT AND NAILS..... \$7.50

PARAFFINE PAINT CO., 524 S. Broadway, Los Angeles

Second-Hand Machinery

Pumps, Engines, Boilers, Shafting,
Pulleys, Water Pipes, Belting, Etc.
Repairing Promptly Attended to at Lowest Rates.

McIntosh & Wolpman,

107 and 109 Deale Street.

San Francisco, Cal.



WE ARE THE SOLE AGENTS AND MANUFACTURERS OF

THE FINLAYSON PATENT WIRE ROPE TRAMWAY

This tramway is the best that has ever been placed on the market. It has no rival. It is strictly automatic and its capacity runs up to 1000 lbs. per bucket. We especially call attention to the automatic loading and unloading terminals and intermediate stations, as being important improvements over all other systems. If you are interested in a tramway and want the best that can be had, write us for information.

THE COLORADO DENVER, IRON WORKS CO. COLO.

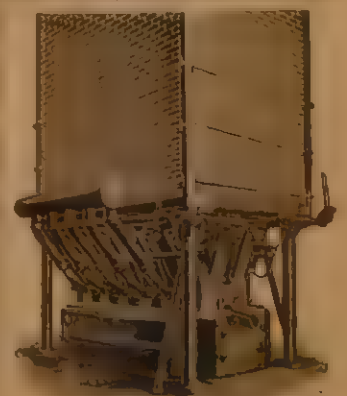
Contracting Engineers for and Manufacturers of

MINING, MILLING AND SMELTING PLANTS

We design and erect CRUSHING PLANTS with
guaranteed capacity to any degree fineness. Investi-
gate late improvements in our line of machinery.

CORRESPONDENCE INVITED

CATALOGUES ON APPLICATION



STANDARD SILVER LEAD WATER JACKET
SMELTING FURNACE.

AGENTS FOR

Brito City Iron Works Engines and Boilers, and
Smith-Valle Steam Pump.

W. H. BIRCH & CO.

OFFICE AND WORKS, 127-129 131-133 135 FIRST STREET, SAN FRANCISCO, CALIFORNIA

Write for a Circular on the

"Birch" Improved TWO-STAMP MILL

IRON FRAME. TRIPLE DISCHARGE. 850-LB-STAMPS. FORGED STEEL SHOES AND DIES.
PRICE, \$450 F. O. B.

LLEWELLYN IRON WORKS.

Manufacturers and Dealers In

All Kinds of Mining, Smelting and Milling Machinery, LOS ANGELES CAL.

J. C. WINANS, Sole Agent Peerless Rubber Manufacturing Co.

Engineers' Specialties
Wholesale and Retail of all kinds of Rubber Goods, including: Packing, Belts, Tires, Boots, Shoes, Hose, etc. Also, all kinds of Rubber Goods, including: Packing, Belts, Tires, Boots, Shoes, Hose, etc. Also, all kinds of Rubber Goods, including: Packing, Belts, Tires, Boots, Shoes, Hose, etc.

ANTI-CALORIC STEAM PIPE AND BOILER COVERING

In canvas JACKETED SECTIONS and Plastic Material Manufactured in San Francisco under Patents controlled exclusively by the Co

Certificate of Superiority
Over All other Coverings awarded by Mechanics Institute Exhibition 1896

401 CALIFORNIA STREET, SAN FRANCISCO, CAL

EASTERN PRICES BEATEN IMPROVED FACILITIES, FINEST WORK LOWEST PRICES



PERFORATED SHEET METALS
For Flour and Rice Mills, Grain Separators, Shaker Screens, Gravel and Cement, Revolving and Shot Screens, Stamp Batteries, Iron, Steel, Brass, and Tin, America in Plants, Zinc, Copper, and Brass Screens for all uses. Invention and Manufacturer of the celebrated Shot Barred and Diagonal Shot punched Screens.

MINING SCREENS A SPECIALTY
Mill owners using screens extensively, can contract for large supplies at favorable rates. J. W. QUICK is the only competent and successful manufacturer of Screens on the Coast, having furnished Screens to the Principal Mills of California, Nevada, Alaska, Mexico, Arizona, Central America, Australia and British Possessions.

San Francisco Pioneer Screen Works

(Established 1860)

221 and 223 FIRST STREET, SAN FRANCISCO.

J. W. QUICK, Prop.

FULTON ENGINE WORKS

Mining, Milling and Smelting Machinery

Estimates Furnished on all Classes of Mining Work

P. O. Box 296, STATION "C"

LOS ANGELES, CALIFORNIA

W. O. ABBOTT, ASSAYER

ASSAYING IN ALL ITS BRANCHES

CHEMICAL DETERMINATIONS ACCURATELY MADE

TOMBSTONE - ARIZONA

The Puget Sound Reduction Company
PURCHASERS OF

GOLD, SILVER, LEAD AND COPPER ORES

Special Facilities for Handling ores from the South-West and Mexico

EVERETT - WASHINGTON

MILLWRIGHT AND ENGINEER

Contractor for the Erection of All Kinds of Mining and Milling Plants.

E. L. HALLAWELL,

15 and 117 MAIN ST., SAN FRANCISCO, CAL.

SANDERS & JONES

Analytical Chemists & Assayers

21 W. 2d South Street,

SILVER CITY AND SALT LAKE CITY, UTAH

Turbine Cascade WATER WHEEL

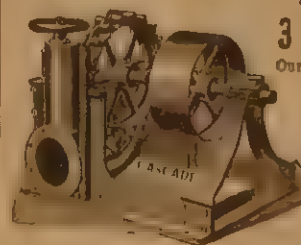
Adapted to all Heads from

3 Feet to 2000 Feet

Our experience of 33 YEARS building Water Wheels enables us to suit every case. We guarantee satisfaction.

Send for a Pamphlet of either Wheel and write full particulars.

James Leffel & Co.
SPRINGFIELD, OHIO, U.S.A.



THOMSON & BOYLE PIPE CO.

MANUFACTURERS OF

RIVETED STEEL MINING PIPE

MADE OF BEST SHEET STEEL.

Water Tanks, Oil Tanks, Steam Boilers, Ore Cars, Ore Buckets, Etc., Etc.

Sheet Work of All Kinds. Correspondence Solicited.

310-314 Requesena St., Los Angeles, Cal.

A. S. CAGWIN,
Assayer and Mineralogist

Gold and Silver \$2.00 Gold \$1.50
Copper \$2.50 Lead \$1.50
Mill Tests \$1.00.

Fresno, California.

KERN COUNTY ASSAY OFFICE

H. VINCENT WALLACE.

Graduate Royal School of Mines

BAKERSFIELD,

CALIFORNIA



Assayer and Chemist
Abdol B. Hanks
Successor to Henry O. Baskin.

The supervision of Ores shipped to San Francisco a specialty. Established 1860.

718 Montgomery Street San Francisco, Cal.

GOLD MINES!

In Julian District

SOUTH CALIFORNIA

I have listed for selling, bonding or leasing. Strict investigation invited. Letters of inquiry about any mine or company answered for \$1. Inclose stamp for reply.

B. A. STEPHENS.

917 F STREET, SAN DIEGO, CAL.

Leonard & Ellis,

MANUFACTURERS OF

VALVOLINE

Cylinder and Lubricating Oils

F. ACKERMAN, AGT.

329 N. Los Angeles St.

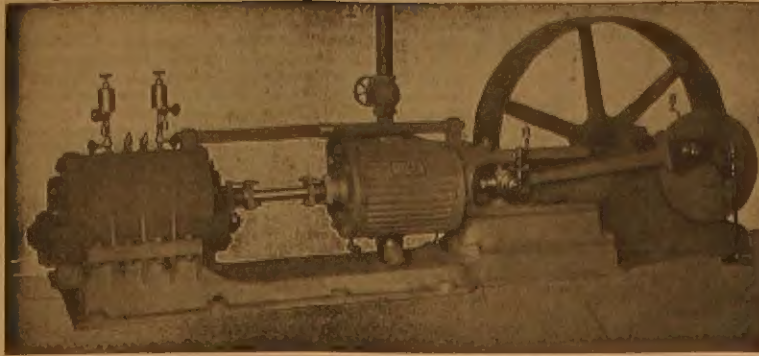
Adrian Babbit Metal

Los Angeles, Cal.

THOMAS PRICE & SON

Analytical Metallurgical and Physical Testing Laboratory

524 SACRAMENTO STREET, SAN FRANCISCO, CAL.



AIR COMPRESSOR

FULTON ENGINEERING — AND — SHIPBUILDING WORKS

MINING AND MILLING MACHINERY

Adapted to every description of Mining and Milling.

Office and Branch Works, 213 First street, San Francisco, Cal

C. DUCOMMUN,

300-302 N. MAIN STREET,

LOS ANGELES

**Assayers Materials,
Mine AND Mill Supplies**

Dixon's Black Lead Crucibles, Denver Fire Clay Crucibles,
Muffles, Scorifiers, etc.; Quicksilver, Drill Steel,
Retorts, Mortars, Gold Pans, Drilling Ham-
mers, Drifting Picks, Horn Spoons
and Shovels.

The Machinery and Electrical Company,

— Sole Agents —

Southern California, Arizona and Northern Mexico.

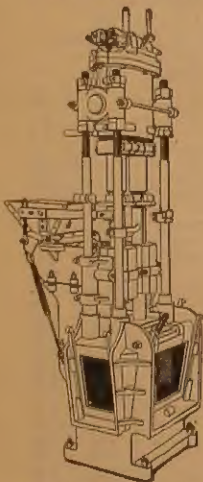
— For —

TREMAIN STEAM STAMP MILLS,
Oil City Boilers and Engines,
Rumsey Power Pumps,
LAWRENCE CENTRIFUGAL PUMPS,
Egan Wood-Working Machinery,
Bates Corliss Engines, Bliss Turned Steel Shafting,
SNOW STEAM PUMPS,
Olin Gas Engines, Bradford Mill Co. Lathes
GATES IRON WORKS MINING MACHINERY
Jewel Leather Belting,
Globe Rubber Belting,
Garlock Packing.
Westinghouse Electric and Manufacturing Company's
Lighting Railway and Transmission Apparatus
Sawyer-Man Incandescent Lamps,
Washburn & Moen Mfg. Co's Wires and Cables.

Also Dealers and Jobbers in

Shafting, Hangers, Boxes, Dodge Wood Pulleys, General
Mining Machinery, Mining Hoists, Whims, Ore Buck-
ets, etc. All kinds of Electrical & Engineering Supplies

351 & 353 N. Main St. Los Angeles, Cal.



TREMAIN STEAM STAMP

We Manufacture

**STAMP MILLS,
CRUSHERS,
CONCENTRATORS,
ENGINES,
PUMPS, HOISTS,**

Stockton Gas Engine, Water Wheels, Wood, Iron, and
Clutch Pulleys, and general repairing of all kinds
of Wood and Iron. All work done in our
own Shop. Estimates furnished
for Plants Complete.

Best equipped works in California. outside of
San Francisco.

CORRESPONDENCE SOLICITED



**Matteson
Manufacturing Co.**

STOCKTON, CALIFORNIA.

Advertise in THE JOURNAL.

The CONSOLIDATED PIPE CO.

Of Los Angeles, Cal.

Have about 25,000 feet 7 1/2
inch inside measure **SCREW CASING**
Which they offer at lowest market prices.

HALLIDIE PATENT ROPEWAY

— FOR THE —

Transportation of Ore, Fuel and other
material, has been erected by us all over
the country and is the most economical
and efficient method known. Nothing
to get out of order, has always given
satisfaction.

California Wire Works

[LICENSEES]

Office, 8 Pine Street, San Francisco, Cal.



Mention the Journal.

WIRE TRAMWAYS

Ropeways,

* Incline Planes,
and Railways.

Hoisting Apparatus, Patent Grip Pul-
leys, Transmission of Power by Wire
Ropes; 25 years experience; Send for
Ropeway Pamphlet.

California Wire Works

WORKS:

332 Bay Street, San Francisco, Cal.

ORE TARIFF.

From Points in Mexico, New Mexico, Texas and Arizona, to El Paso, Pueblo, Denver and Kansas City.

ATCHISON, TOPEKA & SANTA FE R. R.

FROM	TO	Car Loads, in dollars and cents per ton of 2,000 lbs.			
		Ore Concentrates			Lead Bullion, valuation not to exceed \$500 per ton.
		Valuation not to exceed \$50 per ton.	Valuation not to exceed \$100 per ton.	Valuation not to exceed \$200 per ton.	Base Metal, Copper Matte, Bar and Black Copper, valuation not to exceed \$300 per ton.
SONORA RAILWAY	Guaymas, Mex.	10.00	11.50	13.50	
	Pueblo	13.00	15.00	17.00	
	Denver	15.00	16.50	18.50	
	Kansas City	15.00	17.00	18.00	
	El Paso	9.50	11.00	13.00	
	Pueblo	12.50	14.50	16.50	
	Denver	14.50	15.50	16.50	
	Kansas City	14.50	16.00	16.00	
	El Paso	9.00	10.50	12.50	
	Pueblo	11.50	13.00	15.00	
	Denver	13.50	14.00	15.00	
	Kansas City	13.50	14.00	15.00	
NEW MEXICO & ARIZONA R. R.	El Paso	9.50	11.00	13.00	
	Pueblo	12.50	14.50	16.50	
	Denver	14.50	15.50	16.50	
	Kansas City	14.50	16.00	16.00	
	El Paso	9.00	10.50	12.50	
	Pueblo	11.50	13.00	15.00	
	Denver	13.50	14.00	15.00	
	Kansas City	13.50	14.00	15.00	
	El Paso	9.00	10.50	12.50	
	Pueblo	11.50	13.00	15.00	
	Denver	13.50	14.00	15.00	
	Kansas City	13.50	14.00	15.00	
SOUTHERN PACIFIC R. R.	El Paso	9.50	11.00	13.00	
	Pueblo	12.50	14.50	16.50	
	Denver	14.50	15.50	16.50	
	Kansas City	14.50	16.00	16.00	
	El Paso	9.00	10.50	12.50	
	Pueblo	11.50	13.00	15.00	
	Denver	13.50	14.00	15.00	
	Kansas City	13.50	14.00	15.00	
	El Paso	9.00	10.50	12.50	
	Pueblo	11.50	13.00	15.00	
	Denver	13.50	14.00	15.00	
	Kansas City	13.50	14.00	15.00	
S. C. & F. R. R.	El Paso	9.50	11.00	13.00	
	Pueblo	12.50	14.50	16.50	
	Denver	14.50	15.50	16.50	
	Kansas City	14.50	16.00	16.00	
	El Paso	9.00	10.50	12.50	
	Pueblo	11.50	13.00	15.00	
	Denver	13.50	14.00	15.00	
	Kansas City	13.50	14.00	15.00	
	El Paso	9.00	10.50	12.50	
	Pueblo	11.50	13.00	15.00	
	Denver	13.50	14.00	15.00	
	Kansas City	13.50	14.00	15.00	
A. T. & S. F. R. R.	El Paso	9.50	11.00	13.00	
	Pueblo	12.50	14.50	16.50	
	Denver	14.50	15.50	16.50	
	Kansas City	14.50	16.00	16.00	
	El Paso	9.00	10.50	12.50	
	Pueblo	11.50	13.00	15.00	
	Denver	13.50	14.00	15.00	
	Kansas City	13.50	14.00	15.00	
	El Paso	9.00	10.50	12.50	
	Pueblo	11.50	13.00	15.00	
	Denver	13.50	14.00	15.00	
	Kansas City	13.50	14.00	15.00	

FROM	TO	Car Loads in dollars and cents per ton of 2,000 lbs.			
		Ore Concentrates			Lead Bullion, valuation not to exceed \$500 per ton.
		Valuation not to exceed \$50 per ton.	Valuation not to exceed \$100 per ton.	Valuation not to exceed \$200 per ton.	Base Metal, Copper Matte, Bar and Black Copper, valuation not to exceed \$300 per ton.
ATLANTIC & PACIFIC RAILROAD	El Paso	2.20	2.80	3.80	5.00
	Pueblo	2.50	3.00	4.00	5.00
	Denver	2.70	3.20	4.20	5.00
	Kansas City	2.70	3.20	4.20	5.00
	El Paso	2.20	2.80	3.80	5.00
	Pueblo	2.50	3.00	4.00	5.00
	Denver	2.70	3.20	4.20	5.00
	Kansas City	2.70	3.20	4.20	5.00
	El Paso	2.20	2.80	3.80	5.00
	Pueblo	2.50	3.00	4.00	5.00
	Denver	2.70	3.20	4.20	5.00
	Kansas City	2.70	3.20	4.20	5.00
SOUTHERN PACIFIC R. R. COMPANY.	El Paso	2.20	2.80	3.80	5.00
	Pueblo	2.50	3.00	4.00	5.00
	Denver	2.70	3.20	4.20	5.00
	Kansas City	2.70	3.20	4.20	5.00
	El Paso	2.20	2.80	3.80	5.00
	Pueblo	2.50	3.00	4.00	5.00
	Denver	2.70	3.20	4.20	5.00
	Kansas City	2.70	3.20	4.20	5.00
	El Paso	2.20	2.80	3.80	5.00
	Pueblo	2.50	3.00	4.00	5.00
	Denver	2.70	3.20	4.20	5.00
	Kansas City	2.70	3.20	4.20	5.00

Rates on Copper or Zinc Ore to Canon City.

Taking Effect July 1st, 1891.—So far as rates on Copper or Zinc Ores are concerned, Canon City, Col., will be considered as common with Pueblo; in other words the rates shown in Tariff as applying on shipments of Ore to Pueblo, will also apply on shipments of Copper or Zinc Ore to Canon City.

In the absence of positive information as to the value of Ore, Ore Concentrates, or Base Metal, Agents will bill at rates sufficiently high to protect the Company. These rates can be corrected when evidence of actual value is produced.

The market price at destination, to be verified by assays made

by the Railroad Company, at owner's expense, will govern the value and determine the rate.

Agents must cause shippers to understand the condition upon which these rates are based, and should make their receipts read: "Rates subject to correction according to value at destination." These rates only apply on lots of ten tons or over. On lots of four tons and under ten, 20 per cent, and on lots of one ton and less than four, 40 per cent will be added to above rates. Base Metal, Copper Matte and Ore Concentrates, in lots of less than one ton, will take first-class rates from all the above points, except when the rate based on valuation makes it higher, that rates on small lots of high value may not be less than the rates when in lots of one ton or over as above.

Charges on Ore in car loads must be guaranteed, and on lots less than a car-load must in all cases be prepaid.

Omaha Rates.—The Rates to Omaha, Neb., all grades, will be \$1 per ton higher than the rates to Kansas City.

Notes.—All shipments of Ore and Concentrates valued not to exceed \$50 per ton must be billed at the rate for Ore and Concentrates, "Valuation over \$50 not to exceed \$100 per ton," and shipping receipt must be issued by agent at said rate. Agent at destination is authorized to correct the rate for Ore and Concentrates, "Valuation not to exceed \$50 per ton," upon presentation of properly certified smelter returns, showing that the value does not exceed \$50 per ton.

Intermediate points not named will take rates provided for next station beyond.

SOUTHERN CALIFORNIA RAILWAY.

Rate on Ore in car loads, valuation not to exceed \$50 per ton, minimum weight 24,000 lbs. Oro Grande, Cal., to Pueblo, Col., \$10.30 per ton.

Same, Victor, Cal., to Pueblo, \$10.35 per ton.

Ore, car loads, when coming from the Republic of Mexico valuation not to exceed \$50 per ton; San Diego or National City to Denver, Col., and Pueblo, Col., \$12 per ton of 2,000 lbs.

Ore, valuation not to exceed \$100 per net ton and so receipted for, minimum weight 30,000 lbs. 75c per 100 lbs. to Denver and Pueblo, Col., from all points on the Southern California Railway.

ORE TARIFF.

From Points in New Mexico, Arizona and California, to

El Paso, San Francisco and Vallejo Junction.

SOUTHERN PACIFIC R. R. COMPANY.

FROM	TO	Valuation not to exceed \$50 per ton.			
		Valuation not to exceed \$50 per ton.	Valuation not to exceed \$100 per ton.	Valuation not to exceed \$200 per ton.	Lead Bullion, Copper Matte, Bar and Black Copper, valuation not to exceed \$300 per ton.
SOUTHERN PACIFIC R. R. COMPANY.	El Paso, Tex.	\$9.10	\$9.10	\$9.10	11.20
	Deming, N.M.	2.00	2.00	2.20	2.20
	Gage	2.00	2.00	2.20	2.20
	Separ	2.00	2.00	2.20	2.20
	Lordsburg	2.00	2.00	2.20	2.20
	Steins Pass	2.00	2.00	2.20	2.20
	Bowie, A.T.	2.00	2.00	2.20	2.20
	Willcox	2.00	2.00	2.20	2.20
	Dragoon Summit	2.00	2.00	2.20	2.20
	Benison	2.00	2.00	2.20	2.20
	Tucson	2.00	2.00	2.20	2.20
	Casa Grande	2.00	2.00	2.20	2.20
SOUTHERN PACIFIC R. R. COMPANY.	Maricopa	2.00	2.00	2.20	2.20
	Gila Bend	2.00	2.00	2.20	2.20
	Artec	2.00	2.00	2.20	2.20
	Gila City	2.00	2.00	2.20	2.20
	Yuma	2.00	2.00	2.20	2.20
	Newhall, Cal.	2.00	2.00	2.20	2.20
	Mojave	2.00	2.00	2.20	2.20
	Caliente	2.00	2.00	2.20	2.20
	Milton	2.00	2.00	2.20	2.20
	Hollister	2.00	2.00	2.20	2.20
	San Francisco	2.00	2.00	2.20	2.20
	Vallejo Junction	2.00	2.00	2.20	2.20

Rates marked thus (*) apply on Carloads ONLY, other rates apply only on lots of twelve tons or over. On lots of four tons and under twelve, 30 per cent; and on lots of one ton and less than four 40 per cent will be added to the above rates.

Vallejo Junction takes same rate as San Francisco.

THE PUEBLO Smelting and Refining Company,

PUEBLO, COLORADO.

BUYERS OF
Gold, Silver, Lead and Copper Ores,
Copper Matte and Bullion.

Refiners of Gold, Silver, Lead and Copper.

Manufacturers of Bar and Pig Lead, Lead Pipe, Antimonial Lead, Copper Ingots,
Granulated Test Leads and Litharge.

Pays Highest Prices for all classes of Ores.

Especial Attention to Sampling by most Approved Processes.

Quick Returns on all Consignments.

CHAS. B. BOOTHE & CO.

— Dealers in —

Engines, Boilers, Pumps, Shafting Hangers, Pulleys, Belting, Lubricating Oils,

Engineering Mining Hoists Irrigating,
Supplies Oil Well,

IRON and WOODWORKING Machinery

— Of All Kinds —

Electrical Machinery and Apparatus.

We invite an inspection of our goods at the New Store,

126-128 S. Los Angeles Street,

Los Angeles, Cal.

VULCAN ROPEWAY

*
For Conveying
Ore,
Cordwood,
Etc.



EMPIRE, NEVADA, April 17th, 1898

Vulcan Iron Works:—GENTLEMEN: The ropeway furnished by your Company to convey tailings from Morgan Mill to Mexican Mill, a distance of seven-eighths of a mile, is giving entire satisfaction. We transport 200 tons of tailings in ten hours; one man does the whole business, including elevating tailings from hopper in the ground, operating Vulcan self-loader, and attending to the ropeway generally. The self-dumper requires no attention whatever. The Vulcan loader I consider the best feature in the whole Ropeway, making it possible for one man to load 200 tons in ten hours.

Yours very truly,

J. P. WOODBURY, Supt.

VULCAN IRON WORKS,

Manufacturers of Mining Machinery,
SAN FRANCISCO CAL.

Babbit Metal

Eclipse, guaranteed best Babbit Made
COPPER FOR AMALGAMATING PLATES,
Brassiers Sheet Copper,
BATTERY ZINCS, ROOFING TERNE PLATE
Pacific Metal Works,
137-139 FIRST ST., SAN FRANCISCO, CAL.

CLARENCE HERSEY,
Assayer and Chemist,

(Established 1879)

LEADVILLE, - - COLORADO

Samples by Mail or Express Re-
ceive Prompt Attention

SPECIMEN ASSAY PRICES:

Gold silver and lead, \$1.00; any two of the
above, 75c; any one of above, 50c; copper anal-
ysis, \$1; platinum, nickel or tin, \$1.00.
Write for full price list and mailing envelopes

Fraser & Chalmers

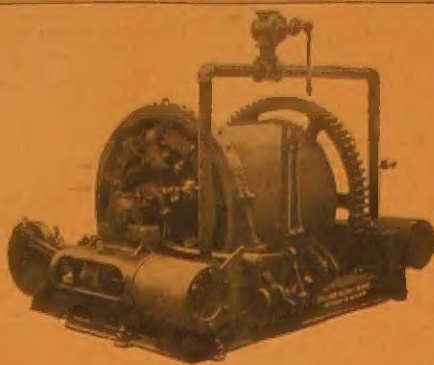
CHICAGO, ILL.

Have Brought Out a New Line of
MEDIUM SIZED

STEAM HOISTING ENGINES



These are designed with great care by engineers familiar with the best previous practice, and knowing just what is wanted to render satisfactory service on a mine. Do you want such service? Then buy one of these improved machines.



OUR SPECIAL LINES OF MANUFACTURE

On which we would be glad to quote are:
STAMP MILLS, SMELTING FURNACES,
CYANIDE PLANTS, ORE CRUSHERS,
FRUE VANNER CONCENTRATORS,
RIEDLER AIR COMPRESSORS AND PUMPS,
OTTO AERIAL TRAMWAYS,
SHOES, DISCS, CAMS,
ROLLS AND JIGS.

Qualified by a Quarter Century of Experience to render you the best of service we invite your inquiries and Patronage.

Fraser & Chalmers,

CITY OF MEXICO:
DENVER, COLO.
SALT LAKE CITY, UTAH

CHICAGO, ILL.
36 BROADWAY, N.Y.

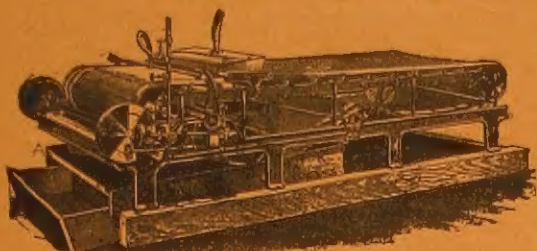
JOSHUA HENDY MACHINE WORKS

Nos. 38 to 44 Fremont St., San Francisco

DEALERS IN AND MANUFACTURERS OF

All the Latest Improved

Mining, Sawmilling, Pumping, Smelting and
Electrical Machinery, Engines and Boilers,
and Mining Supplies of all kinds.



Hendy Improved Triumph Concentrator

Manufacturers of the HENDY IMPROVED TWO-STAMP MILL.

BAKER IRON WORKS

LOS ANGELES, CALIFORNIA

Manufacturers of

Mining and Milling Machinery, Atlas Engines and Boilers, Worthington Steam Pumps

Water Works Machinery
A SPECIALTY

RISDON IRON WORKS

Office and Works, Cor. Beale and Howard Sts., San Francisco

Cable Address, "Risdon's," San Francisco

MANUFACTURERS OF

Johnston Concentrators

Risdon Improved Concentrators, Frue Type

Bryan Patent Roller Quartz Mills

Evans' Patent Hydraulic Gravel Elevators

Risdon Ore Feeders, 'Challenge' Type

Air Compressors

Mining, Milling, Pumping
and Hoisting Plants,

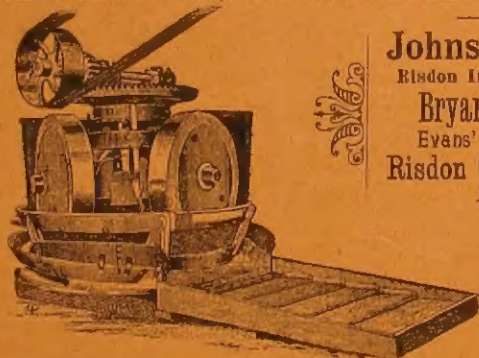
Risdon Pat. Water Wheels,

"PELTON TYPE"

KNIGHT WATER WHEELS

GOLD AND SILVER STAMP MILLS

Catalogues and Prices on Application
Risdon Hammered Steel Shoes and Dies



IMPROVED HYDRAULIC GIANT

The above cut illustrates the improved form of Hydraulic Giant, in which the Center Bolt is dispensed with, which was liable to catch trash. Prices and catalogues of our specialties sent free on application.

PARKE & LACY COMPANY

21 and 23 Fremont St., San Francisco, Cal.



MINING MACHINERY

SOLE AGENTS FOR

THE INGERSOLL-SERGEANT AIR COMPRESSORS AND ROCK DRILLS.

SOLE LICENSEE FOR THE MANUFACTURE AND SALE OF

THE ROPP STRAIGHT LINE FURNACE, For Roasting, Chlorinating and Desulphurizing Ores.

WE CARRY IN STOCK

Horizontal, Vertical and Portable Engines and Boilers, Rock Breakers, Cornish Rolls, Pulverizers, Concentrators, Ore Feeders, Hoisting Engines, Horse Power Hoisting Whims, Water Wheels, Steam Pumps, Ore Cars, Wire Rope, Ore Buckets, Water Buckets, Skips, Blowers and Exhaust Fans, Shafting and Pulleys, Belting, Oils and Mine Supplies. **Manganese Steel Shoes and Dies**

Estimates Furnished for Complete Plants for Hoisting Works, Smelters, Concentrating and Stamp Mills.

